

UNIVERSAL
LIBRARY

OU_164571

UNIVERSAL
LIBRARY

OSMANIA UNIVERSITY LIBRARY

Call No. 110/S86T.

Accession No. 21759

Author Stocks, J.L.

Title Time, cause and eternity

This book should be returned on or before the date last marked below.

THE FORWOOD LECTURES
DELIVERED IN THE UNIVERSITY OF LIVERPOOL
IN NOVEMBER, 1935

TIME, CAUSE AND ETERNITY

TIME, CAUSE AND ETERNITY

THE FORWOOD LECTURES AT LIVERPOOL
1935

BY

J. L. STOCKS

THEN PROFESSOR OF PHILOSOPHY IN THE UNIVERSITY
OF MANCHESTER

WITH A FOREWORD BY
THE ARCHBISHOP OF YORK

MACMILLAN AND CO., LIMITED
ST. MARTIN'S STREET, LONDON

1938

COPYRIGHT

PRINTED IN GREAT BRITAIN

Contents

I

TIME AND CAUSE : THE GREEK VIEW

SECTION	PAGE
1. THE ETERNAL AND THE TEMPORAL - -	1
2. THE BEGINNINGS OF GREEK PHILOSOPHY -	5
3. THE PLATONIC DEVELOPMENT - - -	8
4. ARISTOTLE'S DOCTRINE OF THE FOUR CAUSES	13
5. ARISTOTLE'S SUBORDINATION OF TIME AND CHANGE - - - - -	17
6. FURTHER ILLUSTRATIONS OF THIS - -	23

II

TIME AND CAUSE : THE MODERN VIEW

7. THE FORMATIVE INFLUENCES : SCIENCE AND HISTORY - - - - -	30
A. NATURAL SCIENCE	
8. CAUSE IN SCIENCE - - - - -	32
9. J. S. MILL'S FORMULATION OF THIS - -	37
10. MODERN SCIENTIFIC DOUBTS AS TO THE VALUE OF CAUSE - - - - -	42
B. HISTORY	
11. THE IDEA OF PROGRESS AS HARBINGER OF HISTORY - - - - -	46
12. THE RELATION OF THESE TWO IDEAS EXAMINED	50
13. FURTHER DISCUSSION OF THEIR RELATION -	57
14. BURY'S VIEW OF HISTORY EXAMINED - -	60
15. NATURAL OPPOSITION OF THE SCIENTIFIC AND THE HISTORICAL ATTITUDES - - -	66

C. METAPHYSICS OF SCIENCE

SECTION	PAGE
16. THE METAPHYSICS OF SCIENCE - - -	69
17. THE SAME CONTINUED - - - -	76

D. METAPHYSICS OF HISTORY

18. THE METAPHYSICS OF HISTORY : BERGSON AS WITNESS - - - - -	80
19. THE SAME CONTINUED : BERGSON'S EVIDENCE EXAMINED - - - - -	84

III

CONSTRUCTION

20. THE TASK OF THE PHILOSOPHER - - -	91
21. RETROSPECT AND PROSPECT - - -	97
22. THE MATERIALISM OF SCIENCE - - -	102
23. THE INDIVIDUALISM OF HISTORY - - -	108
24. A COMMENT ON BERGSON'S VERSION - -	114
25. CAN SCIENCE AND HISTORY BE COMBINED? -	118
26. DEFECTS OF THE RESULTING COMBINATION -	123
27. THE SPECULATION OF MR. J. W. DUNNE -	129
28. THE EMPIRICAL EVIDENCE FOR ETERNITY -	134
29. THE SAME CONTINUED - - - -	139
30. FORM AND MATTER - - - -	144
31. TEMPORAL AND ETERNAL - - - -	149
32. CONCLUSION - - - -	154
INDEX - - - -	161

Foreword

That I should be asked to write a few words of introduction to these lectures is a source at once of happiness and of sorrow. For in doing it I have the opportunity to pay a small tribute of honour and affection to the man who from the end of our schooldays at Rugby was, perhaps, my greatest friend; yet the task brings vividly to the mind how great a loss was brought by his sudden death not only to those who knew and loved him, but to philosophic thought in our country.

John Stocks had a mind of singular range, penetration, and clarity. When we were both junior dons at Oxford, lecturing on philosophy and trying to equip ourselves for that work, he and I spent two hours together twice in every week, reading Plotinus. He was always before me in reaching the solution of any difficult passage, and I was constantly impressed by the readiness with which he brought to our aid recollections of relevant discussions in other parts of Plotinus or in the works of Plato or Aristotle. Already he was beginning to be the disciple of Aristotle and master of Aristote-

lian thought who is to some extent disclosed in the following pages. He was ready to admit that Plato was the greater genius, and plumbed depths that Aristotle scarcely knew to exist. Yet the exactitude of thought, the precision of phrase, and the minimising tone of the pupil allured him more than the spiritual fire and dramatic intensity of the master.

This does not mean that he had any love for logic-chopping in detachment from practical interests. His thinking was closely bound up with action, and the dominating concern was always to find, as far as might be, a secure basis for a richly human life wherein all social relationships took a foremost place. But thinking could only help towards this if it were exact, and recognised the limitations under which at any time it was operating. It is typical of him that the word "Limits" should find a place in the title given (from one of them) to the published collection of essays—*The Limits of Purpose*. His method was to choose a manageable field of enquiry and work it with careful analysis and precise correlation of its parts. The result might be small, but it would be reliable. He had a deep dislike of large and fluffy phrases.

These qualities are very evident in the three lectures on one aspect of a great theme which are printed in this volume. He is fully aware of the greatness of the theme; and he knows that at nearly

every turn in his argument he might without irrelevance follow some enticing lure. He glances at some of these; but with a firm discipline he confines the march of his thought to the field selected, so that this at least may be thoroughly mastered. He knows also that immense issues for faith and action are at stake; but he allows no aspiration or sympathy to mingle with the even flow of pure thought. In the result he gives a well-grounded foundation, in the chosen field of his investigation, for conclusions which are familiar elsewhere as the doctrines of Creation and of Eternal Life. But he does not use those phrases in his closing paragraphs, though the latter appears in the course of the argument. For he is considering Time and Cause; so he speaks of "an eternal which is in causal relation with the temporal". That is the aspect of the matter which is strictly relevant to the enquiry; the logical precision must not be sacrificed to emotional interests by using at the close any expressions that even suggest more than the argument has established.

The lectures deserve the careful attention of all who care for serious thinking. Not only are they a memorial of a man to whom many a student owes his introduction to the secrets of philosophy, but they are an admirably lucid exposition of a balance of thought much needed to-day. We have every reason to be grateful to those who decided to give them to the public, and especially to Professor

Alexander, who as a tribute of affection to his successor in the Chair of Philosophy at Manchester, has read the proofs and made the index. That he should have done this is in itself a more potent commendation of the book than any words of mine could convey.

WILLIAM EBOR :

October 18, 1937

I

Time and Cause: the Greek View

§1. The Eternal and the Temporal. §2. The Beginnings of Greek Philosophy. §3. The Platonic Development. §4. Aristotle's Doctrine of the Four Causes. §5. Aristotle's Subordination of Time and Change. §6. Further illustrations of this.

I

The Eternal and the Temporal

For many centuries religious thought has persistently credited its gods with eternal life. A being who is by definition perfectly good and happy cannot seek change, nor can he be supposed to have change forced upon him against his will from without; for change could only be for the worse, and the constraint would itself imply imperfection and unhappiness. Such a being then must be conceived as enjoying a life of a different order from the human life we know; and when speculation gets to work on this difference, it is not usually satisfied to assert merely that the

divine life is everlasting, persisting through indefinite lapse of time with absolute constancy of its pattern and character: more often it finds itself obliged to construe the eternal as involving the total exclusion of all temporal features. The life of God is then envisaged as timeless, as lacking the distinctions of past, present and future which are essential to the life of man. From this point of view the conception of Divine Providence, which is a central feature of our religious tradition, appears in a new light. If the Divine life is temporal, the analogy of human purpose serves pretty well. God is the great artificer who moulds things to His will, as man, with infinitely less wisdom and power, moulds things to his. But if the divine life is timeless, the analogy with human purpose fails. This earth and the whole series of events which makes its history are dependent, not on a super-earth and another series of events, which are the successive decisions of its divine ruler, but on a higher order of being which excludes event and succession, and is eternally what it is. Divine Providence is the religious way of expressing this complete dependence of the temporal on the eternal. Thus the philosopher or theologian, starting from certain central articles of religious belief, is led in the end to the view that time and temporal process are not ultimate facts, are not indeed as such attributable to reality at all. It is true enough that our life and

our experience are temporal. Time is not illusory: for no correction of perception or thinking could make human life intelligible without it; but in the scheme of things time must be conceived as subordinated to eternity, and therefore in a sense as relatively unreal. This is what Augustine, for instance, meant to assert when, following Plato, he said that God did not make the world in time, but made time in making the world.

In this way religious philosophy has been for centuries prone to question the metaphysical status of time. Contrariwise, philosophers of opposite tendency, disposed to question the truth of religion or in open opposition to it, have uniformly tended to make temporal categories supreme. The materialist interpretation of nature in all its many forms, from Empedocles and the atomists in ancient Greece to the theorists of evolution and the dialectical materialists of modern times, has always involved fundamentally the assertion that the temporal process is self-governing, and for this reason has never succeeded in coming to terms with any genuine religion. Perhaps I go too far in saying 'for this reason', since it is possible to reject the idea of a timeless eternal without falling into materialism, and in recent times many who are neither materialists nor enemies of religion have rejected it and made time fundamental in their metaphysics. Those who are interested will find these tendencies

chastised with unacademic vigour in Mr. Wyndham Lewis's eloquent book, *Time and Western Man*. But anyhow, if, as Hobbes says, 'that which is not Body is no part of the Universe', if an account of all things can be given in terms of matter and its motions, then space and time are indefeasibly real, and no God lacking spacial and temporal characteristics is conceivable. If, further, no God having these characteristics is acceptable to religion, as seems to me fairly evident, then the initial opposition from which I wish to start is sufficiently defined for the present.

What I want to do in these lectures is to discuss this opposition from a rather special and restricted point of view. I do not want to embark on a general discussion of materialism. It is the tenability of the view that the temporal is dependent on a timeless eternal which is my special concern; and in interpreting that conception, and the secular controversies that centre on it, I want to devote special attention to the notion of cause. The dominance of time in modern thought, as compared, for instance, with that of ancient Greece, has come about, as I think, because our idea of causal explanation has gradually taken a predominantly temporal form. The Greeks knew, or thought they knew, of many causes which were in no definable temporal relation to their effects; we have reached the point that we recognise none.

Now when the temporal is said to be dependent on the eternal, a causal relation is asserted as holding between them. But clearly the temporal and the eternal cannot be temporally related. Consequently for the modern the eternal is no true cause. Is this right, or are we trying to work with too narrow a conception of cause? My contention, or suggestion, will be that the second alternative should be accepted, that explanation in terms of temporal antecedents is not enough, and that a tenable and satisfactory metaphysics needs in addition something like that formal cause which for Aristotle was the operative principle in nature.

2

The Beginnings of Greek Philosophy

In almost every sense that can legitimately be given to an overworked and much abused word, the ancient Greeks are entitled to the description 'rationalist'. With them the dominant tendency from the beginning to the end of their creative period was the assertion of the power of thought to find unassailable truth and to organise individual and social life in accordance with the findings. In ethics this tendency led their philosophers to incline always to the view that moral ex-

cellence was at bottom a kind of knowledge and moral weakness or perversion a kind of ignorance. In the philosophy of nature it led to the expectation that the fashion and design of things would be more rapidly and directly discernible than they have in fact turned out to be. The longer way of laborious and systematic collection of evidence is one that the human mind has only taken reluctantly and after many disappointments. The Greek belief in reason, applied to nature, expressed itself inevitably in the assumption that nature was intelligible, and they accepted without question the consequences of that assumption. Whatever was unintelligible was no part of nature and unreal. Any appearance which might offer such a surd to thought would be found to dissolve and vanish as illusory under closer scrutiny. To the early Greek thinkers, pure change—change which cannot be said to be change of something permanent and persistent—seemed to fall into this category; for knowledge, they argued, is clearly impossible without stability in things. Hence what they sought in nature was a body or a small number of bodies which remained unchanged throughout all natural processes. Heracleitus shocked his contemporaries when he asserted that nothing remained unchanged, that conflict and change was the universal law of nature, and there were no exceptions. He was prepared, it is true, to specify the laws of this change,

and to us moderns this persistence of a universal law saves him from scepticism. But to his time this was no sufficient safeguard of knowledge: such a universe was to them unintelligible. His successor Parmenides could only save the intelligibility of the world by denying change and movement outright, at the clear cost of stigmatising most human experience as illusory. A little later the atomic hypothesis, perfected by Democritus, sought to show every kind of change as the resultant of changes of place of a few varieties of minute bodies, which were themselves susceptible of no other kind of change whatever, thus giving the world a microscopic material structure which was unchanged and unchangeable.

So far there is no assertion of two worlds or orders. Philosophy is reluctant to allow that change is as all embracing as it appears to be: it seeks obstinately for something permanent and unchanging on which knowledge may rest. It looks for something which may be exempted from the law of change. Before Plato gave eternal being its first classic expression several fundamental changes of the intellectual situation occurred. First came the arrival of mathematics, with the effect of revolutionising the idea of knowledge. Secondly, a powerful religious revival swept over the Greek world, and mainly through the Orphic Mysteries and the beliefs associated with them, profoundly modified

the general view of man's place in the cosmos. Thirdly, through these and other influences, the more speculative minds of the time were led to reflect seriously for the first time on the problem of the true nature of mind or soul.

3

The Platonic Development

THE early thinkers did not ask themselves what knowledge was or what that which knows is. But the direction of their thought presupposes the view that a thing must stand still to be known, *i.e.* they unconsciously assumed that knowledge stood for acquaintance with a permanent object. It was at least doubtful whether crude experience furnished any such object. The Heavenly bodies might be suggested, but owing to their remoteness information about these was not easily obtained: they had to be interpreted in the light of things nearer at hand; and the view which hardened into a dogma with Aristotle that they are quasi-divine and unchanging was not that of the early Greek philosophers. In any case what they wanted was not a *mere* permanent, but a permanent *determinant* of change; and it was by no means clear that the stars could fulfil this rôle. So they were obliged to look beyond crude experience and the macroscopic

level; and they invented first the conception of elementary bodies capable of generating change through mechanical interaction (as when the dripping of water wears away a stone) or by means of qualitative transformations (as when water is seen to pass away in steam), and secondly the indivisible qualitatively unchanging atomic body of infinitesimal size, which, given motion and a restricted number of fundamental differences, can account for the whole variety of nature, as the twenty-six letters of the alphabet suffice to provide for the unexhausted riches of the vocabulary of human wisdom and folly.

The arrival of mathematics, and especially the development of geometry, encouraged a new idea of knowledge. Here was a rapidly growing body of reasoned statement to which it was impossible to deny the name knowledge, and yet it was not apparently a knowledge of any physical object at all. The propositions of geometry, irresistible as they were to the mind, did not give directly any knowledge either of the large-scale objects revealed to the senses or of the infinitesimals supposed by the ingenious natural philosopher to underlie them. What then was it in this case that was known? The name knowledge could not be refused, because the assertions were cogent and irrefutable, and, though they did not directly concern the things of experience and their conjectured extensions, they were

evidently capable of being applied with profit to them and their relations. The triangle or square or circle with which the geometrician dealt was not a permanent object determining change: it had clearly no material character, since it was pointless to ask what it was made of: it could not change or vary in any way, but was timelessly what it was. These objects *were*, since they were known. Thus some knowledge at least was an acquaintance with timeless being. Room had henceforward to be found in the structure of reality for such being.

The second and third factors mentioned above are closely connected. The importance of the religious revival was that it brought a new message as to the nature and destiny of the human soul, and the first serious philosophical speculations concerning the soul were developed in the Pythagorean and Platonic schools under admitted religious influences. The Orphic-Pythagorean doctrine represented the soul as (in Plato's phrase¹) *φυτὸν οὐκ ἔγγειον, ἀλλ' οὐράνιον*, 'a heavenly, not an earthly plant.' In the temporal, material order of nature it was an unwilling prisoner, seeking always, so far as it was true to itself, release and separation from the body. Its real home was with the divine and eternal. Thus on the religious side they offered the individual the hope and the means of escape by means of purifying rites and practices, and the

¹Plato, *Timaeus*, 90 a.

escape led to another world. The philosophers had only to make philosophy the main or sole means of salvation to turn the new religious movement into an ally. Philosophically they had to frame some tenable conception of the two worlds or orders—the temporal and the eternal—and of the relation between them.

Plato in the *Phaedo* puts into the mouth of Socrates, talking with his friends on the day of his death, a developed theory of the soul and of its place in the world; and in a parenthesis, in which he makes Socrates tell the story of his own intellectual development, he offers as the clue to that development and to the doctrine in which it terminates a new conception of cause or reason. The development starts from natural philosophy, conceived as a knowledge of causes. At first Socrates sought the cause of familiar phenomena, the generation, nutrition, and growth of animals, the thought which characterises the human mind, in the material conditions of the environment. The account ends with Socrates' emphatic assertion that the only kind of causation which now satisfies him is one which he has worked out for himself, that which involves the postulate of eternal forms exempt from change. "These other subtle forms of cause", he says,¹ "I no longer accept and cannot understand: but if anyone tells me, that something

¹Plato, *Phaedo*, 100 c, d.

is beautiful because of its brilliant colour or form or such like, I push all that aside—for all these answers only confuse me—and in my artless and perhaps even foolish simplicity I cling to the view that nothing makes it beautiful but *that* beauty, by its presence or communion or advection after one fashion or another. After *what* fashion I am not confident, only that eternal beauty makes all beautiful things beautiful. This seems to me the safest answer for me or anyone else to give.”

The road to the understanding of the beautiful things which we find in this world and recognise as such, is not the explanation of their physical structure or of their temporal antecedents, but the knowledge of the single unchangeable form or principle of beauty, to be conceived as a constituent of an eternal order by which the temporal order in all its parts is sustained. How in detail the relation between the two orders should be described Socrates does not know. After one fashion or another the eternal is active in the temporal. You may speak of it as present at this moment or that, in this or that respect—as Browning’s Abt Vogler is moved by great music and ‘triumphant art’ to cry ‘here is the finger of God, a flash of the will that can, existent behind all laws’. Or you may say, if you like, that in this respect and that, the temporal participates in or has communion with the eternal. Greater precision. no doubt. as to the relation of

the two orders is desirable, but meantime this stands fast: that an eternal order is needed to account for the temporal.

4

Aristotle's Doctrine of the Four Causes

In the review of previous speculation with which Aristotle introduces his *Metaphysics* he makes use of the very same clue which Plato uses in this account of Socrates' development. He shows the development of Greek thought up to his own time as a development in the notion of cause, in the type of explanation employed, and thus seeks to recommend his own philosophy as the completion of a secular process in which the felt inadequacy of one type of cause led thinkers always on to another, until in the fulness of time he himself, following in the footsteps of his master Plato, was able to establish a final equilibrium in the doctrine of the four causes. His account may be summarised as follows:

First, he said, men thought to find the clue to nature in that of which all things were made—'the first from which they come to be, the last into which they are resolved'—they sought a common material substratum for all bodies. Matter, or the material cause, was the principle of explanation.

Then they came to see that such a substratum, if they found it, could not well be supposed to control its own modifications. It was necessary then to look further for a cause of the movement which was set up in this material. This was to seek the cause of movement, or, as we commonly say, the efficient cause.

But, having advanced so far, 'truth itself' forced them a step further. The things thus generated exhibited in their different degrees goodness and beauty. What of these characters, or, in modern terms, what of the 'values'? They could not be credited either to the material substratum itself or to that which was supposed to have introduced movement into it. On the other hand, 'so great a matter' could hardly be attributed to mere chance. Thus thinkers were led, though clumsily and with no clear understanding of what they were doing, to introduce a principle directed to order and goodness. This means that nature is now credited with ends and purposes, with that direction towards the better and the good, in preference to the worse and the bad, which is characteristic of all reasonable purpose. Thus enters what is known as the final cause. In similarly halting and indecisive fashion other thinkers, of whom Plato was the greatest, came to recognise that cause which for Aristotle was the chief of them all, the Form or Essence. When this cause is added to the other three, when

the relation of the four causes to one another is clearly grasped and the primacy of the Form over the rest is established; then for the first time a path is opened to a satisfactory knowledge of nature and her works.

A natural object then, according to Aristotle, to be fully explained and understood, requires to be explored and analysed along four lines. Fundamentally it must be conceived as a form or essence, itself immaterial and universal—*i.e.* capable of other material embodiments—which is embodied in matter suited to its reception. This gives us two of Aristotle's causes, form and matter. These are complementary opposites, but form is conceived as the centre and fountain head of all explanation and understanding; for matter is passive and receptive, and thus intelligible only by a light reflected from form. So far it will be observed there is no mention of time or change. These are not antecedent states or events which account for subsequent states or events. They are called by Aristotle indwelling or immanent (*ἐνυπάρχοντα*) causes. They represent an analysis of the thing as it timelessly is, and will account in principle therefore for any further characteristics which it may possess, and for anything it may do or suffer, if it enters into temporal processes, so far as the explanation does not depend on interaction with other similar things. The other two causes have explicit reference to temporal pro-

cess. All natural objects are in fact subject to change, and therefore in the full account we must specify also the source of movement or change and its direction or goal. The source of movement, commonly called by Aristotle the motive or kinetic cause, has come to be known as the efficient cause. The goal of movement ('end' or 'that for the sake of which') has come to be called the final cause. Both of these are conceived by Aristotle as presupposing form. As Mr. Mure says,¹ "The final cause is form but form operating on the developing thing *a fronte* as its yet unrealised end. . . . The efficient cause is again the form, but as operative *a tergo*. It is the answer to the question 'what initiated the development?'"—and this, "ultimately of course the form, is proximately a temporally prior manifestation of the end or τέλος. Examples are . . . the conscious but ideally conceived end of the sculptor or of the moral agent, which is the prius of their activity; the adult animal which initiates in the sexual act a process of development of which embryo and adult are the termini." "Ἀνθρωπος γὰρ ἄνθρωπον γεννᾷ—'man begets man'. Mr. Mure adds that this "diremption of the form into formal, final, and efficient causes which do not wholly coalesce, and the corresponding prominence of matter, are of course the measure, wherever they are found, of imperfection and unreality."

¹Aristotle, p. 13.

5

Aristotle's Subordination of Time and Change

With regard to this analysis of Aristotle's, it is evident that natural process is being interpreted fundamentally in the light of the familiar phenomena of human desire and purpose; it is essentially a *striving* of something which is in a certain state to achieve another state. Without other evidence Aristotle's frequent use of words like *βούλεσθαι*, *ὀρέγεσθαι*, which are applicable in ordinary Greek usage only to conscious beings, of the tendencies of inanimate things would be sufficient warrant. This tendency finds its climax and culmination in the famous account of God in *Metaphysics* Λ, where the whole world is said to be actuated by the passionate love of God. But this striving is not conceived, as that passage by itself might suggest and, as a modern reader would naturally conceive it if he were left to himself, as a blind urge towards an indefinitely distant perfection to which nature might progressively approximate: it is a striving repeated in each of the innumerable individual lives of the members of each natural species according to the fixed laws of the species to which they belong—laws which dictate inexorably that their highest possible achievement will leave

them at a certain point in the scale of nature, at a definite distance from that final perfection.

Another striking feature of Aristotle's interpretation is his account of that which initiates motion, of the motive or efficient cause. This is indeed the crucial point; for this it is that ensures that his stream can rise no higher than its source. Only an adult man, in whom the end of the process of growth is realised, can set in motion the process of growth by which another adult man is to come into the world. Therefore all natural change is in principle cyclical. Aristotle himself draws this corollary in several passages. Thus in the *De Generatione* (336 b 10) he writes as follows: "The times—*i.e.* the lives—of the several kinds of living things have a number by which they are distinguished; for there is an Order controlling all things, and every time (*i.e.* every life) is measured by a period . . . to some longer and to others shorter. . . . The durations of the natural processes of passing-away and coming-to-be are equal. Nevertheless it often happens that things pass-away in too short a time. . . . For their matter is irregular, *i.e.* is not everywhere the same; hence the processes by which they come-to-be must be irregular too." He goes on to say that this balanced process of growth and decay is continuous and unfailing. For nature aims always at good, and being is better than not-being. But being in the full sense (*i.e.* timeless, changeless be-

ing) is not open to all things. As a second best then becoming (*i.e.* changeful being) was made perpetual. "God therefore adopted the remaining alternative and fulfilled the perfection of the universe by making coming-to-be uninterrupted: for the greatest possible coherence would thus be secured to existence, because that coming-to-be should itself come-to-be perpetually is the closest approximation to eternal being." He goes on to connect all this with the contrast between circular and rectilinear motion: "The cause of this perpetuity of coming-to-be, as we have often said, is circular motion: for that is the only motion which is continuous. That, too, is why all other things—the things, I mean, which are reciprocally transformed in virtue of their passions and their powers of action, *e.g.* the simple bodies—imitate circular motion. For when water is transformed into air, air into fire, and fire back into water, we say the coming-to-be has completed the circle, because it reverts again to the beginning. Thus it is by imitating circular motion that rectilinear motion too is continuous."

The same conceptions dominate Aristotle's account of time. In the *Physics*, time is defined as the number or measure of motion. But motion, he observes, is also used as the measure of time. "What is first," he writes,¹ "is the measure of every-

¹*Physics*, 223 b 15.

thing homogeneous with it: therefore regular circular motion is above all else the measure, because the number of this is the best known." By the regular circular movement of the heavens then, all other processes—alteration, increase, coming into being—which are necessarily irregular, are measured. "This also (he adds) is why time is thought to be the movement of the sphere, *viz.* because the other movements are measured by this, and time by this movement. This also explains (he continues) the common saying that human affairs form a circle, and that there is a circle in all other things that have a natural movement and coming into being and passing away. This is because all other things are discriminated by time, and end and begin as though conforming to a cycle (*περίοδος*),¹ for even time itself is thought to be a circle."

Thus Mr. Mure is well within the mark when he says² that "Aristotle's philosophy of history, had he written it, would have been a theory of successive cycles, but not (as he adds) of precise repetitions." This view is forced upon Aristotle by his thesis that the actual is prior in time to the potential, *i.e.* by his

¹An inheritance from this way of thinking survives in our own terminology in the word 'period', an Anglicisation of the word translated 'cycle' in this passage. The word stands in our use for a relatively complete stretch of time, but in Greek it means literally 'revolution' and it is actually sometimes used to mean 'orbit'.

²*Aristotle*, p. 92 note.

interpretation of the efficient cause. "This seems to make the theory of historical cycles inevitable as the presupposition of the cyclic character of particular processes." If the dominance of form is removed, and with it final causes and the Aristotelian interpretation of the efficient cause, as was done at the beginning of the modern period in the seventeenth century, what is left is an efficient cause which is much more closely related to matter than to form. Things are explained as the resultant of their components, which are also their antecedents; for before the process by which a thing comes into existence can start, the materials out of which it is to be made must be in existence. The way is then open to the conception of progress as a law of nature, of creative evolution, and other expressions of the modern spirit. Time and change become the masters of all things.¹

¹ Bury (*Progress* p. 13) cites from M. Aurelius (xi. 1):

"The rational soul wanders round the whole world and through the encompassing void and gazes into infinite time and considers the periodic destructions and rebirths of the universe and reflects that our posterity will see nothing new, and that our ancestors saw nothing greater than we have seen. A man of forty years possessing the most moderate intelligence may be said to have seen all that is past and all that is to come; so uniform is the world." He adds in a footnote: "The cyclical theory was curiously revived in the nineteenth century by Nietzsche, and it is interesting to note his avowal that it took him a long time to overcome the feeling of pessimism which the doctrine inspired."

It is also worth noting that Nietzsche's conversion to the theory of cycles was preceded by a vigorous attack on history

But Aristotle is following the central Greek tradition when he sets himself to subordinate process to actuality, the temporal to the timeless. Even Heracleitus, who shocked his contemporaries by asserting the universality of motion and change, conceived change as cyclical and guaranteed that the Sun 'would not overstep his measures'. It seems that the far horizon for any Greek had to be circular. Living through a period of astonishingly rapid advance in all the arts of life, the classical writers could hardly fail to observe that progressive advance in the art of living was possible and did at times occur. Yet even where (as in the story of the discovery of fire and all that it made possible) such advance was recognised, Greek thought was always reluctant to view the advance as pure gain not compensated by loss; and the general Greek sentiment, it seems, involved a predisposition to look for greatness rather in the past than in the future. Homer was not regarded as portraying a primitive society, poor in all that makes modern life rich, but as telling tales of times when life was simple no doubt, but men were nearer to the gods than they now are, and of a larger stature and utterance. Aristotle did not scruple to assert that man

and a violent protest against the exaggerated importance attached to it in the nineteenth century. See E. Forster-Nietzsche, *Der einsame Nietzsche*, ch. 9. The attack on history goes back to the *Unzeitgemässe Betrachtungen* of 1873-74. The conversion to the theory of cycles seems to have come suddenly in 1881.

is the highest and most perfect type of being within the orbit of the moon, or to maintain that the satisfaction of men's social needs and ambitions reaches its limit in principle with the City State, but to claim for any generation that it stood on a pinnacle which man had never elsewhere reached, would probably have seemed to him at once a piece of irrationality and an insufferable manifestation of *ὑβρις*.

6

Further Illustrations of Aristotle's Attitude to Time and Change

It is perhaps worth while to quote some passages in which this side of Aristotle's thought comes uppermost. (1) Both in the *Metaphysics* and in the *De Caelo* Aristotle attributes divinity to the heavenly bodies, and in both works he appeals to tradition in support of his claim. In the *Metaphysics* he writes¹—"Our forefathers in the most remote ages have handed down to their posterity a tradition, in the form of a myth, that these bodies are gods and that the divine encloses the whole of nature." He goes on to say that this tradition became complicated in course of time in various ways. Then: "but if one may separate the first

¹Aristotle, *Metaph.* A 1074 b 1, tr. W. D. Ross.

point from these additions and take it alone—that they thought the first substances to be gods—one must regard this as an inspired utterance, and reflect that, while probably each art and science has often been developed as far as possible and has again perished, these opinions, with others, have been preserved to the present days as relics of the ancient treasure.” This suggests a world picture of constant ups and downs in human fortunes through which certain fundamental ideas are preserved.

(2) In the Second Book of the *Politics* Aristotle examines the ideals of Plato’s *Republic* and finds them wanting. He gives reasons—more and less adequate—for his disapproval, especially of Plato’s proposals for community of goods—and then adds¹—“Let us remember that we should not disregard the experience of ages: in the multitude of years these things, if they were good, would certainly not have been unknown; for almost everything has been found out, although sometimes they are not put together; in other cases men do not use the knowledge which they have.”

(3) In the Seventh Book of the *Politics*, where he is outlining his own ideal city, Aristotle confirms his proposals for class division and common tables by representing them as the continuation of an ancient tradition, and in particular by appealing to the precedent of Egypt. He then adds these

¹Aristotle, *Politics* II, 1264 a 1, tr. Jowett.

words:¹ "it is true indeed that these and many other things have been invented several times over in the course of ages, or rather times without number; for necessity may be supposed to have taught men the inventions which were absolutely required, and when these were provided, it was natural that other things which would adorn and enrich life should grow up by degrees. And we may infer that in political institutions the same rule holds. . . . We should therefore make the best use of what has already been discovered, and try to supply defects."

(4) The whole structure of Aristotle's political thought shows the same tendencies. The fundamental thing in the City State is the constitution. This is what makes a city what it is, its principle of identity. The constitution is therefore conceived as unchanging. It prescribes the form of life of the citizen; that is to say, it is thought as supplying the formal cause of the general social life. The first test of fitness in all other features is conformity to the constitution. The laws are equally conceived as in principle unchanging. Rather grudgingly Aristotle admits that arrangements should be made by which they can be changed; but he gives us clearly to understand that change is an evil, for the laws (as he says) have no power to command save that of habit. Hence the conception of a legis-

¹Aristotle, *Politics* VII, 1329 b 24, tr. Jowett.

lative body as supreme in the state, which has dominated modern European thought since Locke's day, is foreign to Aristotle's politics. The supreme body is the 'deliberative' body, and its field is public policy, law-making being included only as a subordinate item. This body "has authority in matters of war and peace, in making and unmaking alliances; it passes laws, inflicts death, exile, and confiscation, appoints and audits the accounts of magistrates." The making of law is subordinate, not because Aristotle did not value law—quite the contrary—but because he did not value *change* of law, as he did not value change generally.¹

The points which I have cited are not made with any emphasis or carefully argued controversial theses. They come in for the most part quite casu-

¹The account of the evolution of Society which Plato gives at the beginning of *Laws* III has the characteristic traits (1) that no advance is ever treated as unmixed good—"out of this has sprung all that we now are and have: cities and governments, and arts, and laws, and a great deal of vice and a great deal of virtue", (2) that it is sketched as something that will have happened many times. In the vast time since cities first existed, thousands and thousands of cities have arisen and perished and each of them has had every form of government many times over. (3) The beginning of any such evolution starts as tradition suggests from one of "the many destructions of mankind which have been occasioned by deluges and pestilences and in many other ways." The task of the surviving remnant was the task of rebuilding from scanty materials. For it would be the hill shepherds who survived, and the city dwellers who perished. (*Laws*, 676-7.)

ally, as it were, in parenthesis and without apology or explanation. Obviously they represent unquestioned assumptions which the writer is confident that his readers will share. They give us an idea of the intellectual climate in which the Aristotelian doctrine of the four causes came to birth, and so help us to understand it. The doctrine, like the Platonic doctrine of forms, of which it is a development, is essentially an assertion of the subordination of process to actuality. The world is known as a vast ordered scheme which simply *is*. Within that scheme there is some small room for change; but any movement there may be in one direction is balanced somewhere by a compensating movement in the other direction. Nature, as Plato puts it in the *Phaedo*, cannot be allowed to go on one leg. It belongs to the scheme that life in this part of the universe should be manifested through a succession of individuals who come slowly to maturity, slowly exhaust themselves, and pass away to make room for others who will carry on the race. But these processes, contained within the scheme of the whole as a subordinate feature of it, are totally devoid of positive significance. The upward movement is from not-being to being: at the summit the individual for a moment *is*: the sequel is the gradual surrender through weakness and exhaustion of that achievement, until what was is no more. Meanwhile the Scheme itself remains eternally,

lacking all temporal characteristics; and, since time and process are fully enclosed within it ("time is the moving image of eternity"), there is no more difficulty in conceiving its control of change as exercised by attraction from in front (final cause) than by impulsion from behind (efficient cause). Those who make timeless being ultimate ask how it can be that anything should *become*, should undergo process and change. Process on this view has to be shown as in some way an approximation to true being, and what needs explaining is not the closeness of approximation, nor the increasing degree of approximation (as in the case of growth), but the distance from the goal at the starting point and even at the end, and the general failure to attain perfection.

II

Time and Cause: the Modern View

§7. The Formative Influences: Science and History.

A. NATURAL SCIENCE.

§8. Cause in Science. §9. J. S. Mill's Formulation of this. §10. Modern Scientific doubts as to the value of Cause.

B. HISTORY.

§11. The Idea of Progress as Harbinger of History. §12. The Relation of these two Ideas examined. §13. Further Discussion of their Relation. §14. Bury's View of History examined. §15. Natural Opposition of the Scientific and the Historical Attitudes.

C. METAPHYSICS OF SCIENCE.

§16. The Metaphysics of Science. §17. The Same continued.

D. METAPHYSICS OF HISTORY.

§18. The Metaphysics of History: Bergson as Witness. §19. The same continued: Bergson's Evidence examined.

7

The Formative Influences, Science and History

My next task is to give a parallel account of the modern point of view in regard to these same problems. There is considerable difficulty in this owing to the wide dispersion of interest and the great increase of specialisation which are characteristic of modern times. Aristotle was able to embrace in his own person all the main intellectual interests of his time and was able consequently to offer a synthesis which he felt confident would do justice to them all. No man can be confident of doing that to-day. To-day we leave mathematics to the mathematician, history to the historian, even art in great measure to the artist. We must recognise therefore that it may well be difficult for us to get anything like as complete a view of our own situation as Aristotle gives us of Greek thought; and at the same time we take note of the warning that we are likely to go wrong if we follow any one line of interest exclusively.

I meet this difficulty by boldly selecting two features of the modern period as decisive for our point of view, taking into account also the fact that we are in a real sense the heirs of the Greeks, so that these modern interests are to be regarded not

as bare novelties, but rather as super-impositions on a background provided by the Greek thought which we have been reviewing. The two features selected as decisive are (1) the natural sciences, (2) the historical point of view. Throughout the modern period, as it seems to me, philosophical thought has been engaged in accommodating itself to science, conforming as a rule somewhat tardily and reluctantly, and the process is still going on. And as for history, its appearance on the scene comes later than that of science, but it is of the first importance for our subject, because of its intimate connection with the conception of time and change, because of its strong reactions on natural science itself, and because the prevalence of the historical attitude has been so often claimed both then and since to be the distinctive mark of the nineteenth century. In what follows I attempt to give some account of the corrections introduced into our view of time and change under the influence of each of these two interests, beginning with science.

A. NATURAL SCIENCE

8

Natural Science reduces Causation to
Efficient Causation

SOME apology or explanation is perhaps needed for the fact that I base my initial statement of the scientific point of view on Mill's *Logic*, which was published as long ago as 1843. Various reasons for this might be given, but the most important and relevant is this, that at this date the reaction of the historical categories on the natural sciences was only just beginning. Spencer had not yet formulated his philosophy of evolution, and Darwin had not yet written the *Origin of Species*. Thus we have the scientific point of view in its purity, reflected through the medium of a powerful and sensitive philosophic mind.

The exposition of Induction in the Third Book of Mill's *Logic* is essentially an attempt to formulate the scientific point of view, and the formulation rests fundamentally on a certain conception of Causation. Thus it links up inevitably through a complicated chain of intermediaries with the Greek tradition which we were discussing in the last lecture. The sixteenth and seventeenth century thinkers who laid the foundations of modern

thought, such as Bacon, Hobbes, Descartes, inherited not so much the Aristotelian doctrine, as a terminology derived from it. The dying scholastic tradition, in which they were brought up, spoke a Latin, based fundamentally on the Greek of Aristotle's *Logic*, and that *Logic* had been based by Aristotle himself on his doctrine of the Four Causes. In their impatience with a burdensome philosophical tradition, which they felt they had outgrown, these thinkers hardly troubled to go back to the fountain head, to see whether they could make more of the original Greek than of the Latin in which the Middle Ages had swathed it. The rejection of Aristotle's authority was already common form when they wrote, and a natural science based on a different set of assumptions was already rapidly establishing itself. The task set them by their time was that of framing a new logic more consonant with these new developments than that which they knew as Aristotelian.

Aristotle, as we have seen, represented his theory of the Four Causes as the product of a long historical development. First men asked 'what are things made of': then 'why do they move', then 'what for', and finally 'what is their essential nature'. Thus the story was one of successive accretions on the original stock of the material cause. The order was Matter, Movement, End, Form. "But" (writes Thomas Hobbes) "as the inventions of men are

woven, so also are they unravelled out. . . . The Analysis or Resolution is by the same way; but beginneth with the knot that was last tyed."

Hobbes was speaking of Pope and Bishops, but the saying applies equally to this story of the Four Causes. Indeed, in the *Leviathan*, Hobbes himself proclaims his eagerness to untie the first knot by declaiming against "abstract essences and substantial forms." These he dismisses as "jargon", typical of that study "which is not properly philosophy . . . but Aristotelity." Hobbes has his conclusion ready. "The World," he says—and he explains that he means by the World, "The Universe, that is, the whole masse of all things that are"—"is Corporeall, that is to say Body . . . and . . . every part of the Universe is Body, and that which is not Body is no part of the Universe." So the first knot was untied: Form, or Essence, was expelled. The next step was to reject the final cause; and this was done with energy and decision by Descartes and most of his contemporaries and successors. "The species of cause called final", wrote Descartes¹, "finds no useful employment in physical or natural things". There remained only the material cause

¹*Meditation IV*. It is worth noting that the reason given by Descartes in this passage is the inscrutability of God's purposes. This shows that what is rejected is not strictly the Aristotelian doctrine; for Aristotle never construes the process of nature as the purpose of God. Purpose for him is foreign to the being of God, and proper only to imperfect beings. His teleology is immanent.

and that which Aristotle called the kinetic cause, *i.e.* matter and motion alone remained as principles of explanation. But the suppression of Form necessitates a reinterpretation of both. Matter is no longer the destined recipient of appropriate form; and the source of movement is no longer the embodied form actuating the process which leads to a further embodiment of the same form. Both matter and motion acquire autonomy. Matter becomes equivalent to Body, and Motion is now an ultimate fact. Thus the way was opened for the state of things in which we were all brought up, in which cause has special reference always to change and movement. The efficient cause may still perhaps be distinguished, at least in academic studies which defer to the old tradition, from formal cause, material cause, and final cause; but in fact these other three applications are felt to be archaic and artificial. When cause is used without qualification in what is felt to be its proper and natural sense, it is used of an event which makes possible or necessary a subsequent event.

In the development which I have briefly described, there is of course much more than a mere change of terminology; profound metaphysical issues are also involved. In a sense, it may seem that the modern world merely simplified the issue. Where Aristotle had prescribed a fourfold method of inquiry—for explanation on all four lines was

as we have seen, for him essential—the moderns concentrated on one. By this, it might be urged, they avoided the confusion incidental to the fact, pointed out by Aristotle himself, that if cause is used in all four senses, one of a given pair of things may be both cause and effect of the other. *E.g.* we take exercise to improve our health. Exercise, then, is the efficient cause of health and health the final cause of exercise. Again, the notion of final cause, with its obvious roots in human purpose, may be suspected of irrelevance outside the sphere from which it was originally drawn; once more possible confusion is avoided if it is, at least initially, excluded. But such considerations are at home rather in science than in philosophy. Philosophy has no business with convenient simplifications and initial exclusions. Science does not deny that what is initially excluded may turn out in the end to be an essential element in the final statement of the truth; and philosophy is concerned with the final statement.

The fundamental opposition between the two points of view is in the attitude to time and change. For Aristotle in the end there were only two causes, form and matter; but form has, as it were, suffered diremption into three varieties of expression—a diremption due to that resistance of matter to form to which the phenomena of change and development are a continual witness. For him there was a

region, that of the heavenly bodies, in which matter made no resistance, where things therefore did not change; and there was also pure Being, that of God, from which matter and motion were altogether excluded. Thus no mark of Time's Arrow is to be found on Aristotle's ultimates. The last understanding of a thing is the knowledge of what it timelessly is; and events, so far as they are intelligible, are illuminated by a light reflected from this knowledge. For the moderns, on the other hand, time and change are everything. Centres of opposition to such a view may be found in religion, art, morality, and even from time to time within science itself; but once the first step is taken the conclusion is inevitable. In order to understand a thing, what you need is to be able to tell the parts of which it is made and how they came to fall into the pattern which they now form. The pattern itself is an effect not a cause, and knowledge is a knowledge of causes.

9

Expression of this Point of View in
Mill's *Logic*

The scientific determinism of the nineteenth century represents a climax in the triumphant progress of this modern view of the world. This phase of its development is to be found faithfully

recorded in the writings of J. S. Mill, particularly in the account of Causation and in his various discussions of the Freedom of the Will. It is axiomatic, first, that the present determines the future, and, second, that the parts determine the whole. Cause has been narrowed to a single point. It is that in any present state of things which explains a selected aspect of its future there is a nexus between successive states or events, which is somewhat surreptitiously and apologetically characterised as unconditional or necessary. The work of exploring nature in this sense is likened to the work of unravelling the tangled fibres of a rope. In that simile the many fibres stand each for a separately intelligible causal sequence, and it is assumed that the aggregate of the knowledge of each sequence will yield a knowledge of the rope as a whole—this, of course, in virtue of the axiom above referred to that the whole is determined by the parts. Applied to the world as a whole, then, this conception of causal explanation involves an indefinite temporal regress. Mill speaks, it is true, of primeval causes, of primitive facts, and even of original causes; in these and other phrases he seems to hint at some first term. But it appears on analysis that by such phrases he only indicated factors which in a general sense are supposedly present throughout the whole stretch of time covered by our calculations, or facts which have to be accepted

as data from which to start. Any starting-point is in fact arbitrary; and wherever you start you require to know two things: first, the distribution of the natural agents at work; secondly, their properties, *i.e.* "the laws of succession existing between them and their effects". Given this knowledge, the prediction of the whole subsequent history of the universe is theoretically possible. The only obstacle is the limitation of "human powers of combination and calculation".

This scheme presents us with an ideal of human knowledge, reducing it fundamentally to the composition of two factors, which may be called respectively *physics* and *geography*. 'Physics' is required to give us an ordered list of the various elements at work in the world and of the laws of their combination. 'Geography' is required to tell us of their actual distribution at a given time. Yet the geographer required by this theory is only a surveyor, recording particular facts. It is not his place to formulate any laws; and his services are required only once. But, it may be said, what of man? What of the human mind, of will and purpose? These have to conform to the scheme. The mind is only a series of events; and the laws of their causal nexus have already been to a large extent formulated by the psychological school, developing from Hobbes, Locke and Hume, through Hartley to James Mill. The relation of these laws to those

of matter may be doubtful, but in their general type and character they conform to the scientific ideal. And, as to will, one has only to see that a motive is an event determining a subsequent event called an action, to convince oneself that the same principles apply here too. Nor does this involve any derogation from human freedom. For what is asked in the name of freedom is only assurance that the motive does really determine the act; and this is not denied. No doubt in this region reliable laws are not easily formulated; but this is only to be expected, since the more complex forms of being are built out of the simpler; and yield, therefore, in general later to scientific treatment than they. Yet Mill hoped, when he wrote his *Logic*, himself to lay the foundations of a science of character, both individual and collective (*ethology*, he proposed to call it) which should formulate the laws of motivation and form the basis of a scientific ethics and politics. Thus the last stronghold would be stormed; and the mind of man would itself at long last be brought within the sweep of scientific method.

The larger movements of scientific thought during the nineteenth century, so far as they affected the general outlook of the time, all served to reinforce and confirm the attitude to which Mill's writings give characteristic expression. It was precisely on this account that developments in the

field of geology, and somewhat later Darwin's *Origin of Species*, aroused such bitter and prolonged controversy. In the last edition of his *Logic* which he revised for the press (the eighth) Mill added some paragraphs commenting on the new generalisation of the "Conservation or Persistence of Force"—"a great advance," he says, "an imposing edifice of theory, the building and laying out of which has for some time been the principal occupation of the most systematic minds among physical inquirers." In this generalisation he is careful to distinguish the element of "ascertained fact" from that of hypothesis, and he is disposed to make some reservations in respect of the hypothetical element. But, in the main, the doctrine was in such full accord with the presumptions of the attitude he has previously taken up, that he could hardly fail to accept it gratefully as a confirmation of their correctness. The "irrefragable fact", he adds, contained in the new doctrine is the "mutual interchangeability of the forces of nature according to fixed numerical equivalents". Difficulties and obscurities no doubt remained—Mill was sceptical with others as to the propriety of the term "potential energy"—but by this generalisation the disparateness of the various forces of nature was broken down. Thus, every event in nature, from the fall of a pebble to the composition of Browning's *Strafford* (which Sir Richard

Owen¹ calculated cost the poet fully *two ounces*), could now be regarded as the transformation of some part of a single total quantum of energy from one to another of its innumerable disguises, according to laws derived from the nature of that energy itself.

IO

Modern Doubts as to the Scientific Value of the Causal Notion

I n view of recent developments in physics it is important to note that this narrowing down of the notion of cause which is characteristic of modern science has had as its accompaniment, at least in recent times, a certain scepticism as to the value of the causal category, which seems to be coming to a head at the present day. James Ward gave his first Gifford Lectures in 1896, and he then called attention to the tendency of science in certain departments to eliminate 'substance and cause' from its analysis of nature. He quoted Mach's explicit avowal of this aim—"I hope that the science of the future will discard the idea of cause and effect, as being formally obscure; and in my feeling that these ideas contain a strong tincture of fetish-

¹*Journals of Caroline Fox*, II, 22 October, 1843. [Owen had said that "when the brain is much worked, a certain portion is actually lost."]

ism I am certainly not alone." He described the elimination of cause as being at that time 'at last complete' in the sphere of the higher mechanics, and clearly expected the tendency to extend further.

Thirty years later Sir Arthur Eddington, lecturing on the same Gifford foundation, has recently explained to us that the science of our day is unable to distinguish between cause and effect. For the one-way relation of causation, with its inevitable reference to what he calls 'Time's Arrow', it substitutes a symmetrical relation which he takes leave to name *causality*. This revised causal notion is, however, only fully operative in 'primary physics'. "Secondary physics can distinguish cause and effect, but its foundation does not rest on a causal scheme, and it is indifferent as to whether or not strict causality prevails." Again he says—"whether or not there is a causal scheme at the base of atomic phenomena, modern atomic theory is not now attempting to find it; and it is making rapid progress because it no longer sets this up as a practical aim." Here the retention of the causal notion in a modified form for primary physics and the suggestion that there may after all be a causal scheme at work in the atom are obvious signs of reluctance to break with tradition altogether; but the general argument of the lectures in fact implies a more complete rejection of causation than the sentences which I have quoted would by them-

selves suggest. If Eddington is right it is no longer true in the world of the physicist that every event has a cause. We have lost cause, where we lost substance, in the atom. "We have chased (he writes) the solid substance from the continuous liquid to the atom, from the atom to the electron, and there we have lost it." There too, it seems, we have lost cause; for cause implies law, and what we find, or conjecture, at the end of our chase is individuals with ways of their own. Lawlessness, apparently, is to be regarded as characteristic of individuality.

These recent developments on the basis of the new physics are admitted by the physicists themselves to be tentative and doubtful. No one is quite certain where they are leading us, and in this region therefore one can no longer speak confidently of a scientific point of view. They may be interpreted in different, even in contradictory ways. Against Eddington's interpretation one may set for example a recent pronouncement by Professor Max Planck, the distinguished head of the Kaiser Wilhelm Institut at Berlin. Science, if Planck is right, has now to surrender a fundamental assumption, namely, "that the course of a process can be represented by means of an analysis of it into its spatial and temporal elements. . . . It is thus the concept of wholeness which must be introduced as well into the field of physics, as into that of biology, in order to enable us to understand and formulate the laws

of nature.” This ‘fundamental assumption’, which in Planck’s view science has to surrender, seems to be identical with the two cardinal principles which we have found to underlie Mill’s account, *viz.* (1) that the present determines the future, (2) that the parts determine the whole. The introduction of the ‘concept of wholeness’ must surely involve the attribution to a being as a whole (*e.g.* an animal) of a power to determine in some degree the nature of the parts (*e.g.* the composition of the blood). In whatever degree this is recognised, so far the animal nature of the whole being (conceived generically, as animal, or specifically, as lion or tiger, or perhaps even individually, as this lion or tiger) acquires independent causal status and is invested with a power over the parts which is not wholly accounted for by the nature of the parts themselves. This amounts to the reintroduction of Aristotle’s Form or Essence as a causative factor. It would involve a major revolution in the scientific point of view. For through all its history, from its beginnings to the present day, the influence of science has been in the direction of empiricism and materialism. It has consistently represented the effort to explain things in terms of their antecedents and their constituents, and it has consistently rejected all temptations to complicate its explanations by the introduction of any other agencies into the account.

B. HISTORY

II

The Idea of Progress as Harbinger of
History

I turn now to the other cardinal feature of the modern period, the study of history. In what sense history is a science may be disputed, but there is no doubt that it stands now for a field of systematic enquiry, which has its own methods and its own experts, and in that sense it rivals and competes with philosophy and the natural sciences. It was the latest of all our intellectual interests to achieve such a status. Hume began to publish his *History of England* in 1754, and before he died he saw the first volume of Gibbon's *Decline and Fall*, which was published in the year of his death, 1776. Vico and Montesquieu had already prepared the way for the application of the historical method to politics. One may go further back and acknowledge here, as elsewhere, the seminal work of the ancient Greeks. But, whatever qualifications may be necessary, it remains substantially true that history came into its own in the nineteenth century. In that century for the first time it succeeded in establishing itself as an influential factor in every department of thought, an indis-

pensable element in the explanation of all earthly phenomena.

Of this development it would be very difficult to give a complete account: the history of the historical idea remains to be written. I shall not attempt anything so comprehensive here. In what follows, I take my start from certain writings of the late Professor Bury, because he was not only an eminent practitioner of the historical method, but also much given to interesting and provocative reflection upon the nature of the method which he was employing. Two of his published works are specially relevant, *The Idea of Progress*¹ and the posthumous volume of essays and addresses published under the title *Selected Essays*² and containing his celebrated inaugural lecture on 'The Science of History'.

One of the most remarkable of the new ideas which came to dominate European thought on an extensive scale during the nineteenth century is the idea of Progress. Bury's reason for making a special study of this idea was its evident close connection with the historical point of view, and the same reason justifies us in attempting to come to terms with it. Bury defines the idea as follows: it is, he writes, "a theory which involves a synthesis of the past and a prophecy of the future. It is based

¹*The Idea of Progress, an Inquiry into its Origin and Growth* (London, 1920).

²*Selected Essays of J. B. Bury*, edited by H. Temperley (Cambridge, 1930).

on an interpretation of history which regards men as slowly advancing—*pedetentim progredientes*—in a definite and desirable direction, and infers that this progress will continue indefinitely.” The goal envisaged, as he goes on to explain, is “a condition of general happiness”. He notes a further implication. “The process”, he writes, “must be the necessary outcome of the psychical and social nature of man; it must not be at the mercy of any external will; otherwise there would be no guarantee of its continuance and its issue, and the idea of Progress would lapse into the idea of Providence”.

I shall have something to say about this definition in a moment, but first let me make a few remarks, following Bury, about the origin of the idea. It seems to have caught hold of men’s imagination for the first time in the early years of the French Revolution. Condorcet elaborated it with the passion of a prophet in a treatise written under the shadow of the guillotine. In his works the optimism of the Encyclopaedists, who prepared the way for the Revolution, is reinforced by the enthusiasm of the revolutionaries themselves, conscious of founding a new and better world—an enthusiasm concisely summed in Paine’s confident cry: ‘the Spring has begun’. The characteristic belief of the revolutionaries was a belief in the indefinite perfectibility of the human race—a belief already formulated, before the Revolution, by Rousseau and

others, coupled with the conviction that reason and knowledge were the instruments of perfection and that social institutions were more of a hindrance than a help. Each revolutionary thinker gives these ideas his peculiar form and emphasis, but there is much that all have in common.

Condorcet's design was to show "the successive changes in human society, the influence which each instant exerts on the succeeding instant, and thus in its successive modifications the advance of the human species towards truth and happiness." He recognised in the whole of known history nine periods, to which he added a tenth, a period still to come and one which would be final. Thus there is a millennial element in Condorcet's point of view, which is really perhaps inconsistent with the idea of Progress and certainly has no necessary connection with it. It is the hopes of the Revolution rather which express themselves in this idea of a final consummation. On the other hand, in his survey of past history Condorcet is no legitimate child of the revolutionary spirit. That spirit, as Bury observes, was inclined to regard history as "an unprofitable record of folly and crime which it would be well to obliterate or forget." Some idea of progress may have been congenial to the French Revolution, but the historical attitude was definitely uncongenial. In England it was the more conservative minds, like Hume and Burke, which saluted with enthu-

siasm the genius of Montesquieu, founder of the historical method in politics, but William Godwin, declared partisan of the Revolution, went out of his way to explain that he thought little of Montesquieu. It was indeed the general verdict that the danger of the Revolution consisted essentially in its violent rejection of history (neatly symbolised by its declaration of the Year I), though the verdict would not then have been put in those terms, nor would it have been generally understood if it had been so put. What men said was that the Revolution stood for Reason and Philosophy, and it was these that were regarded as refuted when the Revolution issued by degrees in violence and despotism. The persistent theme however of the argument which Burke developed in criticism of the Revolution and its works is the inestimable value of organic process and natural growth, and this is at bottom essentially an appeal to history.

12

Relation of the Idea of Progress to the Study of History

The attempt to define more closely the relation of the idea of progress to the study of history brings me back to Bury's definition. This as it stands asserts a close connection between the idea

of progress and the study of history. It may even seem to assert, though this was not Bury's intention, that the idea grew up as a result of the study of history. But in fact the idea comes first and the study develops later. The atmosphere of the French Revolution, as of all other revolutions, was unhistorical, as I have said, even anti-historical. A revolutionary atmosphere will naturally be one in which the prospect of great achievement opens, in which belief in 'the advance of the human species', even the possibility of indefinite advance, flourishes, but not one in which the systematic study of the records of the past, which is history as we know it, is at home.

Why, we may ask, incidentally, should history arise so late in human development? The answer is not immediately obvious. But we may note that memory itself achieves prominence relatively late in the life of the individual: in the life of the young it is relatively insignificant, and in the very old it is commonly believed to be a main staple of thought. Further, history is artificial memory; and while natural memory suffices, artificial memory is not required. There is also the point that a mere record of past events for the strengthening of memory is not by itself history. It must be something more than that. How much more, we do not yet know. But in brief and for the present it is perhaps sufficient to say that time and change remembered

and recorded must assume certain dimensions before it will seem worthy of systematic exploration and analysis; and, as Bacon said, *antiquitas saeculi juvenus mundi*.

However that may be, there is evidently some latent opposition between the spirit to which history appeals and the spirit which is possessed by an exaggerated sense of present possibilities of progress. The one seems indeed to be the natural corrective of the other: for actualities are in standing opposition to possibilities, and when the actual is seen by the historical analyst as a resultant of a past sequence of events, he or his readers will be tempted to confer on the conjectured continuation of the movement into the future a derivative actuality, an inevitability in face of which human effort is as vain as against historical fact. Man is no doubt largely in bondage to the past, and the course of events in the past is certainly a guide to their course in the future. But the revolutionary does not wish to be reminded of this: the bondage of the past is precisely what he is trying to throw off. Therefore the study of history is highly antipathetic to him.

Bury further introduces into his definition of progress the notion of necessity. In so doing he may appear to be bringing in something which belongs rather to science than to history. But it is to be observed that the necessity in question is doubly qualified in the remainder of the statement

which I quoted. Positively the process is conceived as the outcome of the 'physical and social nature of man'; and negatively, divine providence has to be excluded. The human will is thus made central, which for science it is not, and at the same time necessity is asserted. The exclusion of divine providence is then inevitable, if this is conceived as the operation of a superhuman will external to the wills of men; but, as the result of this exclusion, the necessity asserted becomes not less but more obscure. The predestination of the theologian and the natural law of the scientist are both rejected. What is the necessity that takes their place? Some further explanation is needed here; but, whatever the explanation may be, in any case it is evident, first, that the idea of progress which eventually established itself did in fact include an element of necessity: the gradual advance of humanity was conceived as over long periods at least inevitable and irreversible. It is evident, secondly, that this side of the idea is not particularly congenial to the revolutionary spirit, which is opposed to gradualism and necessitation and concerned rather to assert man's freedom by concerted effort to achieve unheard of things.

One last point with regard to Bury's definition of progress. It makes, as I have observed, the human will central. Here, I suggest, the historian speaks rather than the believer in progress as such. The

doubt which I mean to suggest by these words is whether a believer in progress who did not happen also to be a historian would ever have singled this out as a fundamental implication of the idea of progress. But Bury is certainly right in regarding this as part of the original idea as it was formulated at the time of the French Revolution. Human will was central for Condorcet and his contemporaries; but in my view the reason why it was central for them was that they were fundamentally *rationalists*. They believed that reason was the one progressive principle, and that man, because he possessed reason, was the one progressive creature in the world. Such rationalism, when it is generalised into a comprehensive view of the time process, must necessarily involve making will and reason the universal directing forces of the world. It is only because Bury makes will central that he is able to assert that the course of change must be towards a desirable end: for desire falls within the circle of will, and is not credited in this sense (*i.e.* as involving a prevision of the end) to the lower animals. Thus the idea of progress, as Bury defines it, in spite of its assertion of necessity, involves an exaltation of man in the scheme of things which is quite foreign to the scientific point of view. A universe which affords a guarantee of human progress must be pervasively responsive to human values, and it was human progress that those who first for-

mulated the idea had in mind. What is not quite clear in Bury's account is how far he regards his definition of the idea as historically conditioned, whether, I mean, he wishes his reader to believe that all this is true of *any* idea of progress, or merely to take it as descriptive of the main features of the idea as it actually prevailed at a particular time. It could, I fancy, be shown without difficulty that many of the nineteenth century believers in progress adopted the full materialist position, and for them surely the human will could not truly have been said to be central in the temporal process. On the other hand, an opponent of materialism, who asserts the freedom of the human will, is not thereby obliged to surrender his belief in progress. One is tempted therefore to ask, what is the central core or kernel of this idea? Why are men concerned to assert the general prevalence, or even the necessity, of an upward movement in the world process, by which things become on the whole ever better and better?

In answer to these questions I would tentatively suggest that the basic idea in the notion of progress is that of systematic accumulation. We want to be able to say with Aristotle that 'nature does nothing in vain'. What could be more vain than mere transference of energy from one form to another, according to assignable laws, but otherwise as aimless and undirected as the successive phases of a kaleidoscope? 'One damned thing after another.' Every-

thing that happens, we feel, must somehow leave its mark. The world must be different thereafter because the event has occurred. Hence bare repetition is the one thing that is totally incomprehensible and inconceivable. Such a view guarantees that all material is used up, and nothing is wasted. Everything in the present contributes something to the future. Such a conception, if it can be asserted absolutely without qualification (and it seems unlikely that such unqualified assertion can be justified except on *a priori* grounds) will exclude degradation, since that can only take place where there is some failure to use up part of the material presented by the present for the shaping of the future. When the suggestion is further added that novelties good and bad are continuously and spontaneously appearing, we appear further to have some guarantee of progressive advance. The question, in what direction? still needs to be asked. The famous Spencerian formula provides a plausible answer. We want to be assured that in asserting progress we are not simply imposing our personal or human desires and valuations upon the world. We want an independent and objectively reliable measuring rod. Spencer's formula seems to satisfy this ambition. The movement, he tells us, so far as it is progressive, is from simple to complex, a movement by which the things which compose this world of ours change cumulatively in the direc-

tion of increasing specialisation and differentiation, with the logical complement of increasing perfection and elaboration in the general organisation of the wholes within which the specialisation takes place.

13

Progress and History: Further Consideration

The relation between the two ideas which we have been considering is clearly not quite simple. I am inclined to suggest that the idea of progress was the first hasty *a priori* form of the historical attitude, which the fuller comprehension of the nineteenth century superseded and corrected, in much the same way as at an earlier date an *a priori* natural science was gradually weakened and finally suppressed by the rival growth of a systematic empiricism. Bury offers two other terms which he regards as standing in partial opposition to the idea of progress. These are the notions of *development* and *genetic history*. Of the first he says¹ that "a right notion of the bearing of history on affairs, both for the statesman and for the citizen, could not be formed or formulated till men had grasped the idea of human development. This is the great transforming conception, which enables

¹*Selected Essays*, p. 9. ('The Science of History.')

history to define her scope. The idea was first started by Leibniz, but though it had some exponents in the interval, it did not rise to be a governing force in human thought till the nineteenth century, when it appears as the true solvent of the anti-historical doctrines which French thinkers and the French Revolution had arrayed against the compulsion of the past. At the same time it has brought history into line with other sciences and potentially at least has delivered her from the political and ethical encumbrances which continued to impede her after the introduction of scientific methods."

Of 'genetic history' he says that it was a conception which fully established itself in the first quarter of the nineteenth century. "Genetic", he writes, "does not commit us to the doctrine proper of evolution, nor yet to any teleological hypothesis such as is implied in 'progress'. For history it meant that the present condition of the human race is simply and strictly the result of a causal series (or set of causal series)—a continuous succession of changes, where each state arises causally out of the preceding; and that the business of historians is to trace this genetic process, to explain each change, and ultimately to grasp the complete development of the life of humanity."

He adds a little further on in the same essay¹ that "the conception of the history of man as a causal

¹*Selected Essays*, p. 26.

development meant the elevation of historical enquiry to the dignity of a science."

These contentions of Bury's are of course provocative. They would certainly not command general agreement among historians. They deserve much fuller discussion than I can give them. I bring them up now because they express an attitude to the temporal process dominated primarily by history and secondarily by science, just as contemporary Darwinism expresses an attitude dominated primarily by science and secondarily by history. In the development of the modern world first comes science, then history, followed, as the two influences interact, by historical science and, finally, scientific history. It is easy to see that the combination of the two points of view is not likely to be effected without difficulty. It is indeed something of a *tour de force*, for *prima facie* the scientific and the historical points of view are in almost diametrical opposition to one another. Science is highly *abstract*, confining itself in every case to the minutest fraction of what comes under observation; history is of all studies the most *concrete*, being pledged to take into account absolutely everything that falls within the prescribed stretch of space and time. Science interests us in nature so far as she repeats herself, showing how like causes produce like effects, and reducing the appearance of infinite variety to a formula of monotonous uniformity.

According to Mill, it will be remembered, science aims at discovering "the fewest and simplest assumptions, which being granted, the whole existing order of Nature would result", and seeks to demonstrate "the mutual interchangeability of the forces of Nature according to fixed numerical equivalents". History, on the contrary, reveals a world which never repeats itself, emphasising always what is new and original in each succeeding generation, and equally among contemporaries and things of the same kind bringing out their differences more than their likenesses—a world in short in which personality, individuality, character are everything, law in the scientific sense nothing or next to nothing. Every man and thing is for history irreplaceable, and the historian's ultimates are thus as many as the individualities he meets in his researches. Briefly, history shows *man changing*, science shows *matter moving*; and though the first exhibit must in some sense contain the second, the second excludes the first.

14

Bury's View of History examined

History and science, then, are not natural allies: they are products rather of alternative and mutually complementary ways of dealing with experience. It is therefore interesting to ask how far

Bury's account of history is coloured by the attempt to exhibit them as allies. When this question is asked, we find at once that most of the peculiarities of Bury's view, which made it a centre of controversy when it was announced and give it still to-day a certain air of paradox, are closely connected with this side of his thesis. We notice, first, that there is in his account an emphasis on necessity and causal connection which is foreign to most historians. I do not mean to suggest that the normal historian is able to dispense with the notion of causation altogether. The view generally accepted since Kant's time that causation is a category is no doubt correct, and if it is a category it is unescapable. But cause is indispensable in the typical historical judgment only in the sense in which it is indispensable in the ethical judgment. We cannot reasonably praise or blame a man for what he did unless we have reasonable grounds for thinking that he did it. We have to attribute to his will a power of altering its environment in certain respects, and to suppose that his power in the given case was used or deliberately withheld. The historian of human society is concerned fundamentally with such decisions and their consequences, not primarily that he may praise and blame them, like the moralist, but simply that he may show them for what they were, in the light of their far-reaching antecedents and results. If an event, or

some peculiarity of an event, can be shown to follow directly from a decision taken by a certain King or statesman, say, two years before, it is so far explained for the historian. He is not seeking, like the scientist, to formulate general laws of sequence. He recognises of course that there are such laws, and in estimating the consequences of a given decision he makes frequent use of such laws (*e.g.* 'prussic acid is a poison'), taking them on authority from relevant science; but he formulates no laws himself: what he discovers and expounds are all particular interrelations within a particular series of events. The historian's necessity is therefore not the necessity of scientific law, as when the scientist says—'this is bound to happen here, because heat expands bodies': it is a necessity of a different order. In narrating the events of, say, the French Revolution, the historian's aim, not realisable doubtless in its fulness, is so to tell these events as to convince the reader that, given the characters of the leading agents and the atmosphere of the time, the sequence is inevitable. This means that for him always the individual is the principle of explanation: he is satisfied only so far as he succeeds in reducing his fragmentary data to phases in the developing but persistent individuality of persons, societies, nations, civilisations.

Some of the wider implications of all this become evident if we turn our attention to a second marked

characteristic of Bury's view of history. He is much concerned to vindicate the importance for the historian of the lives lived by ordinary men and women. This contention has of course nothing in common with the sentimental tenderness of eighteenth century romanticism for humble life, with the protest, for example, of Gray's *Elegy* against the 'Grandeur' which hears 'with a disdainful smile The short and simple annals of the poor'. "The predominant importance of the masses", writes Bury, "was the assumption which made it possible to apply evolutionary principles to history." He is reacting obviously in this against another side of romanticism, the tendency to exaggerate the power and significance of outstanding personalities; he is reminding us that kings and rulers are circumscribed by the state of the peoples over which they rule. But the reference to 'evolutional principles' shows that this is not the main thing he has in mind. Clearly he is convinced that this hypothesis makes history more scientific, and attaches special importance to it on that account. We do not need to look far to find his justification for this belief. Taken in a certain sense, this historical assumption has a clear analogy with the normal procedure of the natural scientist. Faced with large scale phenomena like the behaviour of plants or rivers, the scientist normally seeks his explanation in terms of a lower structural level, ultimately in the laws of physics

and chemistry and the behaviour of minute atomic bodies. When the clash of two States in war is seen as issuing from the beliefs and decisions of their rulers, the explanation has no analogy with those of the scientist; but if the rulers can be shown to be determined in their beliefs and decisions by the nature and behaviour of the masses they rule, then the analogy is at once apparent. The policy of the State is the large scale phenomenon, and the separate actions of the individual members of the mass are the small scale phenomena by which it is explained. The explanation generally is in accord with the scientific principle that the parts determine the whole. The doctrine known as economic determinism or the materialist interpretation of history is fundamentally the assertion that this principle (perhaps, in view of the word 'economic', in a special and somewhat restricted form) is the only legitimate mode of historical explanation.

The two articles of Bury's creed which I have been discussing have in common, I suggest, the tendency to bring about a rapprochement between science and history, by minimising, if not altogether denying, the historian's reliance on individuality as a principle of explanation. Individuality is only a peculiar constellation necessarily produced in given material by the operation of unchanging natural laws, and the irregularities and discon-

tinuities which mark phenomena as observed are removed by reinterpretation on the lower structural level. In view of this it is perhaps surprising at first sight to find Bury insisting on two points which support rather the opposite thesis, that history can never be scientific. In his celebrated essay on 'Cleopatra's Nose' he is found arguing for the omnipresence of contingency. Had Cleopatra's nose been of a different shape, the whole history of the world in our era would have been different. But the shape of Cleopatra's nose was what we call a mere accident. We mean that it had no causes commensurate with its effects. Thus we have to recognise that in some considerable measure accidents rule history. Again in a letter to the *Morning Post*, which is reprinted in his collected essays, we find him urging that historians not only inevitably are, but ought to be prejudiced: they should offer the reader an interpretation of events in the light of their own valuations and points of view. But if accidents rule history and historians are necessarily prejudiced, where is the supremacy of scientific law and the scientist's boasted impersonality? It is impossible to deny that the opposition between such statements and the views I was discussing earlier is a real one. So far as these last statements are true, history is not a science, and therefore these are certainly points that Bury should have dealt with when he was arguing his

thesis that history is a science. But they are nevertheless consistent with that thesis in this sense that they testify to the persistence in his mind of the desire to regard history as a science. In his historical work, dominated by this ambition, he was compelled to recognise these facts: the vigour of his statement is evidence of the force with which they struck him; and that force they owe to their perceived inconsistency with the claim that history is a science. Cleopatra's nose and the historian's prejudice are in fact, we may suggest, merely symbolic representatives of that individuality which he had tried to drive out, as he now confesses, in vain.

15

Natural Opposition of the Scientific and the Historical Attitudes

Bury's famous thesis that history is a science is not one that commends itself immediately to the common sense of educated Englishmen. To them it sounds at the first hearing like one of those provocative paradoxes which are likely to turn out on examination to be at most half-truths. They suspect at once that he is forcing his case. This suspicion is, I submit, confirmed by the detailed examination which I have just made of some of his leading contentions. Of course if science means

only *Wissenschaft* and implies only that history is, or aims at being, a systematic body of knowledge with established methods and organising principles of its own, not a mere concession to that love of a story, which we all have, or a mere instrument for the use of statesmen and men of action—if that is all, well and good. Most of us would be glad to agree, and would concede further that history in that sense is the achievement, in principle, of the last few generations. But if science is meant to imply a close kinship in method and aims with the natural sciences—and this seems to be the idea which really underlies his claim, since it accounts for all the peculiarities of his view as the other does not—then we feel that he is unconsciously falsifying his statement of the historical point of view in order to bring it into line with the dominating influence of his own time and his own thought.

For in fact it seems that in the economy of the human spirit science and history are mutually complementary, and in that sense always opposites and even enemies. They represent two alternative ways of building on immediate experience, the one showing the world as a field for the interplay of continuing and successive individualities, the other as the endlessly varied expression of a relatively small number of changeless laws and timeless universals. Both of these pictures may well be

substantially true, but neither is complete. Each indeed draws upon the other, but each is always careful to subordinate what it borrows to its own supreme interest. That man cannot live for long without food is a truth of science, and every historian relies upon it. Darwin's work, on the other hand, on the *Origin of Species* is in substance an attempt at the reconstruction of a historical process, but it is not the process that interests Darwin. His object in studying the process is to throw light on the question what a biological species really is, and this is a scientific, not a historical question. The ordinary man, who is a specialist in neither field, has a place for both interests. So far as the scientific attitude masters him, to the exclusion of its complement, he is utilitarian, rationalist, sensible, methodical and systematic, but somewhat hard and ruthless in action, cold, grasping and businesslike. So far as he is the slave of history, to the exclusion of science, he is affectionate, sensitive, and loyal perhaps, but at the same time a victim of all the idols of the tribe, hostile to strangers and to novelties, nationalist, particularist, quarrelsome and given to hero-worship. It is tempting to suggest that as the rationalism of the French Revolution involved the total rejection of the historical point of view, so the nationalism which grew out of it, culminating in our own day in Italian Fascism and the National Socialism of Germany, represents

a reaction in which history in its turn 'exceeds its measures'. Anyway it seems that in history and science we have two complementary activities, between which, in the interests of a happy and healthy life, balance and proportion require to be established.

C. METAPHYSICS OF SCIENCE

16

The Metaphysics of Science

The scientific point of view is easily generalised into a metaphysical system because it is a conscious and methodical intellectual activity with definite and agreed methods of enquiry. To make the generalisation it is only necessary to suppose that science has a monopoly of truth. The supposition does not exclude the possibility of scientific error, nor does it deny the fact of scientific ignorance. Much, no doubt, perhaps even an infinity, remains to be found out, and what is registered as established truth is doubtless infected to an unknown extent with errors, great and small, errors of calculation and of interpretation. What is supposed is only that the laboratory of the scientist is the one place in which our intellectual anchor really holds; that what is revealed to him is all that is revealed; so that his is the final court of appeal on all matters

whatever. The scientist's method is admittedly one of piecemeal advance: there may therefore well be regions of experience which he has not yet conquered, such as, for example, human action and thought. These necessarily have to wait their turn; but in the meantime the metaphysic which bases itself on science can conjecture their nature and sketch them in in rough outline on the evidence of the samples from other fields which the scientist has already delivered. We know well the picture of the world which results from this attitude. Fifty years ago it was a well defined doctrine, preached with great confidence by many people, but commoner on the whole among laymen interested in science than either among scientists or among philosophers. To this doctrine the name mechanistic materialism was given. The passages which I summarised from Mill's *Logic* were offered as a pretty faithful record of this state of things. Ward's lectures on *Naturalism and Agnosticism* were an attempt by a later generation to come to terms with it. Scientific developments since that time, on which I have so far said little, have made the position a good deal more obscure. Some contemporary observers persuade themselves that these modern developments, especially those within the field of theoretical physics, represent a real revolution in the scientific point of view, so that science is becoming in some way more friendly to a spiritu-

alist interpretation of reality. That scientists are now more disposed to such an interpretation may well be true, but it is necessary to be quite clear why this is so. If we pursue this question, we shall find that there is reason to doubt that this disposition is correctly attributed to science itself.

There are a variety of ways in which natural science might legitimately be said at different times to go through phases more and less favourable to a spiritualist interpretation of reality. But in the main it will be found that these variations correspond closely with variations in the strength and confidence of scientific doctrine, and that the two factors vary inversely, spiritualism strengthening as scientific confidence weakens, and weakening as it strengthens. There are certainly times when the scientist becomes increasingly reluctant to generalise his point of view, that is, to erect his principles into a metaphysic. This option of refusal to generalise has always been open, and it has perhaps been the prevalent attitude of scientists ever since the modern era began. Its prevalence justifies the second term (Agnosticism) in the title of Ward's Gifford Lectures. The question we have to raise in regard to this agnostic attitude is the question why the scientist is at a particular time reluctant to generalise. The answer must be: by reason of pressure either from inside or from outside the

field of science. If the pressure comes from outside, it is not really science that has become more favourable, but the general intellectual situation in some other respect. Examples of such external factors influencing the attitude of the scientist would be the general prevalence of historical modes of interpretation, or the widespread acceptance of a new metaphysical synthesis, such as was offered by Kant or by Hegel. If the pressure comes from within the scientific field, it will be found, I believe, in every case on close examination that the reason is, not a further victorious advance of scientific theory, but a failure on the part of science to continue that systematic and orderly penetration of the unknown on which its prestige depends.

There are times when the established principles and methods of science may be temporarily in liquidation. A fundamental science may be threatened with a breakdown of some kind. Now in so far as science is forced back by such a breakdown to the re-examination of its principles, so that its whole structure is for the moment fluid, and it is hesitating between different principles, or is operating with inconsistent principles in different parts of its field—and each of these descriptions may be verified from the reports of competent scientists on their own sciences in recent times—so far the scientist will inevitably be disabled from generalis-

ing with the old confidence. Not being certain what the scientific assumptions are, he will be in a weak position for asserting that they are the organising principles of reality. But such uncertainty is clearly in itself no basis for any positive contribution to knowledge. It leaves the mind in that liberty of indifference which Descartes rightly contrasted with the mind's true freedom: for lack of any clear and distinct idea we are free to say what we please. Such general considerations are only confirmed if we examine any one of the many points of detail in which contemporary science is supposed to show its new sympathy with idealism or spiritualism. (I hope I may treat as negligible the vulgar delusion that matter ceases to be material when it loses its grossness or hardness or solidity; that a mineral which is conceived as a system of infinitesimal solar systems is somehow more spiritual than a mineral which is conceived as a complex of tightly locked solid atoms.) Take for example this specimen from Eddington, asking not whether it is plausible or true, but what precisely the evidence of science on Eddington's showing is.

"Much of the apparent uniformity of Nature", says Eddington, "is a uniformity of averages," and he goes on to explain that what reaches us through the senses is only a total resultant or average effect depending on a very large number of minute acti-

vities which as such are not perceived. "Regularity of the average," he suggests, "might well be compatible with a great degree of lawlessness in the individual." Elsewhere he cites as an analogous case the calculations as to the expectation of life at various ages on which life-insurance policies are based. "The eclipse of 1999 is as safe", he says, "as the balance of a life-insurance company; the next quantum jump of an atom is as uncertain as your life or mine. . . . Averages are predictable because they are averages, irrespective of the type of government of the phenomena underlying them." The individual case, he insists, is really uncertain; it is not merely that we cannot expect to obtain the full data on which to calculate. "The future", he says, "is a combination of the causal influences of the past together with unpredictable elements—unpredictable not merely because it is impracticable to obtain the data of prediction, but because no data connected causally with our experience exist". He further notes that, so far as science adopts this position, it "thereby withdraws its moral opposition to free-will".

It is certainly true that a scientist who teaches that the next quantum jump of an atom is unpredictable is in a weak position for denying that the last desperate jump of a wretched heart-broken suicide over a cliff is also unpredictable; but it is doubtful whether the concession is of the slightest

value to the believer in the freedom of the human will, because it is evident that we have here only an assertion of ignorance, and because it is certain that ignorance explains nothing but other ignorance, even if the claim is warranted that this ignorance is necessary and irremovable. The scientist does not, we are told, indeed cannot know how his atom will jump: therefore the human will may well be free. But free-will is a theory devised in the attempt to understand what human action is, and it is very doubtful whether atomic theory can throw any light on its tenability one way or the other. If, however, the positive achievements of atomic physics are of doubtful significance for the theory, its failures will throw even less light on it; and what we have here essentially is a failure on the part of the theory to deal satisfactorily with part of its data. It may be noted further, apart from that, that on the analogies given, even the negative freedom alleged should be limited to the atomic level. For the behaviour of the composite body, made up of innumerable atoms, should have the constancy of the average or of the balance of a life-insurance company. So that without some special supplementary theory as to the relation of the various structural levels to one another the withdrawal of the scientific objection to free-will would seem to be premature.

17

The Metaphysics of Science, continued

The general impression that the science of our present day is less materialistic than it used to be in our fathers' time owes much, as is well known, to the brilliant incursions of eminent scientists into philosophy, of which the work of Eddington, already quoted, is an example. There is an important factor in these works which is not covered by the foregoing analysis and deserves special attention—a factor fitted perhaps by the old name Scepticism of the Instrument. There is nothing very mysterious about this. It exactly corresponds to the malaise which seizes the golfer who finds, as every golfer occasionally must, that he is unable to drive his usual 200 yards, or whatever the distance may be. In such a situation the golfer is reluctantly forced, painfully and to the prejudice of his game, to consider his swing and his hold on his club, to analyse them and if necessary correct them. (In addition the golfer has also the resource of buying a new driver.) In other words, the golfer is obliged by signs of diminished efficiency, to undertake an unusual and rather painful exercise of self-examination. His normal healthy extrovert attitude, with its golden rule 'keep your eye on the ball', is complicated by an uncom-

fortable dose of introversion. He is forced to be critically reflective. Similarly the scientist who finds that his accustomed tools and methods fail him is forced into a self-criticism which is not normal to him. His normal attitude is one that takes no account whatever of himself, of the observer. He just assumes that, if he observes carefully and systematically what comes before his eyes and asserts nothing that is not forced on him by what he sees or verifies in it, he cannot go far wrong and must by degrees build up a picture of the world in which room will necessarily be found for the observer, who is after all a part of it. For though we do not see ourselves, the world we see, when planned and plotted, is found to leave room for us who see it. On this view the observer waits his turn, and his turn is in fact last, just because he is the one feature of the world which is neither observed nor a conjectured extension of the observed. Scepticism of the Instrument, then, leads the scientist to pay a premature and disturbing attention to the observer. About this phenomenon all I want to say in the present context is this: that so far as the scientist undertakes this self-examination he is really philosophising. He is forced to enter on those questions as to the nature of knowledge, the relation of sensation to thought and of mind to reality, on which the formative period of modern philosophy from Descartes to Kant mainly turned.

It is not therefore surprising to find that the results of such reflection in our modern scientist-philosophers are apt to have a very close resemblance to the views of one or other of the three British empiricists, Locke, Hume and Berkeley. I would observe, further, that in this region the scientist's eminence in his chosen branch of science gives him no special authority, and if his deliverances tend to confirm, say, an idealistic view, it is not strictly correct to say that science tends to such a view. Some scientists do, but not directly by reason of their science, rather because they have taken into account certain considerations which science generally is apt (or obliged) to ignore, *viz.* those belonging to the theory of knowledge—*i.e.* by reason of their philosophy.

I would not go so far as to deny that it is just conceivable as a possibility (though I would certainly assert that it is not verifiable as fact) that science might one day contribute directly from its own wealth, that is, by the implications of its own constructions and discoveries, to a non-materialist view of the world. The possibility chiefly concerns the biological sciences. There the scientist is directly faced with the phenomena of life, the growth of plants, the principles of inheritance, the instincts of animals, human sensation and reflection upon it. Hitherto in face of such phenomena the scientist as a rule has followed his usual method.

On the principle that the components determine the composition, he has tended to assume that the laws of physics and chemistry, framed to account for the behaviour of bodies in which no vital phenomena are perceptible, will suffice ultimately to explain the phenomena of life: thus life in all its expressions will in the end be shown to be a resultant from the arrangement of matter in itself lifeless after a certain fashion. Such a simple materialism has by no means satisfied all scientists, and outside the scientific camp it arouses widespread opposition by its tendency to deprive consciousness of all originative power. Now suppose that the biologist should find himself one day forced to recognise such a power, to attribute to mind a causal efficacy not derived from its material embodiment, to predicate perhaps of life even in its lowest forms some degree of similar independence. What would be the result for the scientific world generally of such a change in the biological section of the field? It would mean certainly that a metaphysic which based itself on the sciences could no longer maintain a simple materialism: that skeleton would have disappeared from the scientist's cupboard. But would this necessarily mean the reconciliation of philosophy and science? Would a spiritualist interpretation of reality become any more tenable from the scientific point of view? This question is not altogether easy to answer. At a later stage of the

argument I hope to introduce some considerations which will help towards an answer. In the meantime what I would say here is that in my view science is compelled by its method of analysis and by the piecemeal cumulative procedure that springs from it to remain essentially materialistic and therefore one-sided. In Aristotelian language its province is the material cause, and explanation from that angle will always remain insufficient to render a full account of the world.

The final conclusion which I draw from these considerations is, bluntly, that we have no reason to suppose that natural science will ever be in a position to contribute otherwise than by negatives to the supplementation which, as a principle for the philosophic interpretation of reality, at present it plainly needs.

D. METAPHYSICS OF HISTORY

18

The Metaphysics of History: Bergson as Witness

I turn now to consider the like question in the parallel case of history. The difficulty here is that historians seem to be lost in the concrete detail of their studies and do not attempt to general-

ise such principles of continuity as they may employ into a metaphysical system. Perhaps I ought to attempt an examination of the practice of some of the great historians with a view to disentangling from their work some of the concepts of continuity which they employ. But I shrink from the difficulty of such a task, and, clutching perhaps at a straw, I suggest that the nearest approach we have to a generalisation of the historical point of view is in the philosophy of Bergson. Bergson, it is true, was brought up in the scientific tradition, but he was brought up in a generation and in a country which was largely dominated by the historical attitude. And further his philosophy is essentially a revolt against the science of his time. For this reason it forms an admirable antithesis to the principles which I have been discussing, and I propose to turn at once to the discussion of some of its implications.

The main emphasis of Bergson's attack on science, as formulated in the series of works which culminated in 1909 with *Evolution Créatrice*, was on his demand for a reconsideration of the notion of time. He demanded, like Alexander after him, that time should be 'taken seriously'. In striking here he seemed to strike at the very centre of the whole construction. In its modern use cause had come, as I have explained, to be given an exclusively temporal significance. And since cause was

central, time might also be regarded as central. With dramatic propriety Bergson accused those for whom time and change were everything of having reduced time and change to nothing. If the time-process is such that accurate knowledge of the present makes possible exact prediction of the sequel, then, at any point of the process, for exhaustive analysis 'all is given' (*tout est donné*), and what remains in the infinite expanse of time still to be traversed is only meaningless repetition. But, Bergson argued, when the real nature of time as revealed in experience is frankly faced, it is at once evident that repetition is the one thing definitely excluded. History never repeats itself. This means that the ideal of prediction has to be surrendered. The future is unpredictable; for life is self-creative, and time is either invention or it is nothing. Thus evolution is made to confute determinism. •

Bergson's philosophy is so well known that there is no need to attempt a general account of it. He operates mainly with a number of sharp antitheses, such as those of mechanism and finalism, of intelligence, instinct and intuition, of order and disorder. The intelligence 'murders to dissect', reducing a complex colour scheme to a mosaic of tiny spots of pure colour, or representing a simple movement, like a gesture with the arm, as a succession of transitional positions. The successive shots into which the cinematographic operator

decomposes the event he records are typical of the analytic work of the intelligence. The following quotation is representative of his point of view and contains a number of ideas which are highly relevant to our present problem. It comes from the fourth and last section of *Creative Evolution* in which he surveys the various philosophical systems and shows their inadequacy from his point of view. The Greek and the modern philosophy of nature, which he often opposes, he is here identifying. We are in a sense only the heirs of the philosophy of Forms or Ideas. Both the ancient and the modern are guilty in his view of the error of 'the Cinematographic method'. Both are opposed to the true philosophy of becoming.

"Hence," writes Bergson,¹ "throughout the whole of the philosophy of ideas runs a certain conception of duration, as also of the relation of time to eternity. For him who is at home (*s'installe*) in becoming, duration appears as the very life of things, as the fundamental reality. The Forms, which mind isolates and stores in concepts, are then only snapshots of the changing reality. They are moments plucked from the duration, and, just because we have cut the thread which bound them to time, they do not endure. They tend to get confused with their own definition, that is to say, with the artificial reconstruction and the sym-

¹*Evolution Créatrice* (1909), p. 343: E.T. p. 334.

bolic expression which is their intellectual equivalent. They enter, if you like, into eternity; but what eternity they have is no longer distinguishable from unreality. On the other hand, if we subject becoming to the cinematographic method, the Forms are no longer snapshots of change; they are constitutive elements of it, representing all that there is of positive in becoming. Eternity no longer hovers over time as an abstraction; it is the basis of time's reality. Such is precisely, in this respect, the attitude of the philosophy of Forms or Ideas. It establishes between eternity and time the same relation as between the gold coin and the small change—change so small that payment may continue indefinitely without the debt being ever paid: the gold coin would free us from that debt at a stroke. This is what Plato indicates with his splendid phrase, when he says that God, being unable to make the world eternal, gave it Time, 'a moving image of eternity'."

19

Metaphysics of History: Bergson's
Evidence examined

In this passage Bergson faces us with a general dilemma which is the work of the analytic intelligence. We may have either time or eternity, and

whichever we choose the consequences will be unsatisfactory because they will do violence to one side of our experience. The Greeks are the partisans of eternity: for them in consequence the time process is a feeble imitation of reality. The moderns generally choose the other alternative: for them consequently the eternal Forms, which to the Greeks were indefeasibly real, have become unsubstantial ghosts and 'bloodless categories'. To escape from this dilemma we are invited to sink ourselves in becoming, to see passage as the life of things. We have each of us first-hand experience of life in our own persons; and the fundamental datum is not the things or events which we observe with our senses, but the inner experience of the life-process which the self-conscious mind of man continuously enjoys. In this new sense man is to be taken as the measure of reality. We are to begin, then, by turning our eyes inward and exploring the implications of our own conscious life. But we are told, further, that the conceptual analysis which is our habitual method of dealing with the data of sense, is not only no help but is actually a hindrance here. Conceptual analysis is the characteristic expression of intelligence, and the introduction of intelligence involves the immediate suspension of the immersion in process which is desired. What is wanted is not intelligence, but another attitude of mind called intuition. This

attitude involves similarly the complete suspension of conceptual analysis, that is, of all that has hitherto been regarded in the central European tradition as the ripest fruit of human reason.

Let us suppose now that these demands are satisfied. What, we may ask, is the deliverance of the resulting intuition on the report of him who claims to have satisfied them? His report is of bare becoming, of novelty continuously growing out of novelty, of a flux which is reality itself. Necessity survives only in the form that the later phases of this continuously creative process are as necessarily the heirs as they are the successors of the earlier. In place of the time-honoured principle of the Uniformity of Nature we have, it seems, a diametrically opposite *a priori* principle of the Variety of Nature. What comes after must be different from what came before: such is the essential nature of temporal process. But this principle remains wholly negative, powerless to organise and unify the process of which it is asserted, until some such notion as growth or development is brought in to restore continuity. The metaphor of inheritance is used above to describe this fundamental implication of Bergson's thought. Whatever term is used for the required supplement, it is clear that variety or differentiation is not by itself sufficient, but requires some supplement to account for the positive character of the process described.

We may pause at this point for a moment to notice that Bergson's championship of intuition against reason is essentially, on its negative side, an assertion of the incapacity of the natural sciences to reveal the true nature of the real. "Nature", said Mill, when he was expounding the scientific point of view, "is not only uniform: it is also infinitely various". He exhibits to us a science which is at war with this infinite variety, seeking to reduce it to uniformities. Bergson's intuition, *per contra*, is at war with the uniformities, seeking to recover the infinite variety. Where science sees repetition, intuition sees development; where science finds equivalence, intuition asserts accretion. Science explores a universe of matter distributed in space, with time as its fourth dimension: intuition reveals life, and 'duration', which is *lived time*. Science seeks to exhibit the whole as the field of necessary and unchanging law; intuition discloses the freedom which is beyond all law and rational necessity and is the irresponsible architect of its own unpredictable continuation.

'Time', says Bergson,¹ 'is either invention or it is nothing'. And, again, he writes,² 'there are no things, only actions'. But, we may ask, does not invention presuppose an inventor, and must not an inventor have, or be, a mind? Is time, then, to be

¹*Evol. Créat.*, p. 369: E.T. p. 361.

²*Ib.*, p. 270: E.T. p. 261.

credited with a mind, or are we to suppose rather that time and invention are parallel abstractions, so that what he means to say is that what is temporal, as life is, must also be inventive and creative? Then it will be not time, but that which is temporal that needs mind. What is it then, we ask, that is temporal? Actions, he answers, and not things. But we reply, can there be an action without an agent? And is it really possible to credit the actions which show novelty with the power of invention which their novelty proves to exist somewhere? Bergson's answer to all these questions centres on a term of somewhat ambiguous status, *Elan Vital* or Vital Impulse. This is, or hides, the real operative principle in his cosmology. The Vital Impulse is certainly not to be identified with time: equally certainly, it is neither a thing nor an action. When it is qualified by the adjective 'primitive' or 'original' its function seems to be that of accounting for the first development of all living things, the original direction being further thought of as the main determinant of their subsequent history. So far it resembles the deist's God who made the world and left it to look after itself, but with more freedom for the creation. But when we are told further that it passes from generation to generation, and maintains itself in all the various evolutionary series into which it is divided, being something common to them all, and the fundamental cause of all their

variations, we see at once that this parallel will not fit. It is rather a super-individual Form of Life, capable of a great variety of particular expressions, constraining within certain limits all living things and thus giving them the unity signalised by their common name. In this rôle it resembles rather the Nature which Aristotle half seriously personified as a good housewife, conscientious to make the fullest use of all available material.

When we reach this point, the terminology of means and end becomes so natural that it is difficult to avoid using it. The striking comparisons of different lines of evolution which fill some of the most brilliant pages of Bergson's book are hardly intelligible except in terms of purpose. Life, or Nature, is seen to try one road after another: some lead to stagnation and failure, others to differing degrees of success. "The organic world", writes Bergson,¹ "from top to bottom is all the time a single great effort: but most often the effort stops short, now paralysed by contrary forces, now distracted from what it should do by what it is doing, absorbed by the form which it is struggling to assume, hypnotised by it as by a mirror. Even in its most perfect works, at the moment when it seems to have triumphed over all external resistance as well as over its own, it is at the mercy of the materiality to which it had to yield itself". Bergson pro-

¹*Evol. Créat.*, p. 138: E.T. p. 134.

tests that this is not teleology, and it is true that if it is compared with the external, God-imposed teleology of the eighteenth century, its differences from that interpretation of nature are at least as marked as its resemblances. But the case is different if we compare it with the immanent teleology of Aristotle, for whom a single purpose rules all imperfect things because all things have in them a spark of the divine perfection. When this comparison is made, it is difficult to exclude the suspicion that under cover of the *Elan Vital* Bergson is really reintroducing, not merely Purpose and the Final Cause, but with it in addition all the other three causes which Aristotle used. The things he is saying presuppose for their clear analysis not merely the distinction of means from end, but also the distinction of impulse from process and above all of Form from Matter. What invents and creates in the end for Bergson is not Time but Life. Life is a single principle seeking its own fuller realisation through the diversified succession of living things. Thus there is after all an agent and an inventor, and there is only one. Its name is Life.

III

Construction

§20. The Task of the Philosopher. §21. Retrospect and Prospect. §22. The Materialism of Science. §23. The Individualism of History. §24. A Comment on Bergson's Version. §25. Can Science and History be combined? §26. Defects of the Resulting Combination. §27. The Speculation of Mr. J. W. Dunne. §28. The Empirical Evidence for Eternity. §29. The Same continued. §30. Form and Matter. §31. Temporal and Eternal. §32. Conclusion.

20

The Task of the Philosopher

In what sense is it legitimate to demand that the world shall make sense or be what is called 'rational'? How far is a philosopher entitled to argue on such lines as this: 'unless the world has this or that characteristic, it will not be fully intelligible; therefore it has this characteristic or something very like it'? If the blanks in these questions are filled by terms drawn from the present discus-

sion, their importance will be obvious. Suppose it to be clear that a world which is fundamentally spatial and temporal, as common sense supposes this world to be, is necessarily in certain fundamental respects unintelligible, are we justified in concluding that time and space are not fundamental characters of the real? And, positively, if it can be shown that the hypothesis of an eternal order, on which the spatio-temporal order is to be conceived as dependent, makes that order intelligible or more nearly intelligible, are we justified forthwith in asserting the reality of the eternal order, with whatever qualifications its failure to create full intelligibility may necessitate?

Such questions are not easy to answer, and philosophers are by no means agreed as to how they should be answered. They raise the whole question, what is the proper method of philosophy, which has been a major point of difference between philosophers from the beginnings of philosophical speculation to the present day. The word 'intelligible' needs careful examination. It is a question how far the human mind possesses or can acquire any direct insight into the nature of reality. It is a question whether anything is fully intelligible, and things which seem quite unintelligible at first sight, such as the unexpected result of a scientific experiment or the act of a friend which is quite out of character, often turn out later not only to be rela-

tively intelligible but also to throw a flood of new light on other things imperfectly understood. And there is another reason for going carefully here. To an unknown extent our notions of intelligibility are affected by our likes and dislikes, our desires and temperaments. William James classified philosophers, on the evidence of their metaphysics, as tough-minded and tender-minded, implying that there are two kinds of temperament. Each temperament presumably finds that the one type of structure creates an intelligible world while the other does not. Apart from the personal idiosyncrasy on which James's classification depends, there is the general human predicament. How important is man in the scheme of things? Is a world in which he is unimportant to be reckoned unintelligible? The fact that both affirmative and negative answers to this last question are easily found in representative thinkers of the present day is sufficient proof that the test of intelligibility is not easy to use.

Without making any pretence of prescribing a royal road to philosophical truth I would recommend, in face of these questions, as at least an example of sound method, the procedure of Aristotle. On any disputable and unsolved problem which came within his field, his usual procedure was to begin by a brief statement of the main opinions which had been held in regard to it. And

when he had developed his argument and made his own suggestions for a solution of the problem, he sought to recommend that solution by showing that it conceded more truth to more of these opinions than any other that had been offered; that it showed more of them to be half-truths or partial truths and fewer to be totally mistaken. The ideal solution, it is implied, would be that which incorporated them all; but, as the opinions reported were often in mutual contradiction, that in the full sense was often impossible.

Following Aristotle's hint we suggest that a philosopher who is seeking a starting point for constructive thought will do well if he takes as his empirical material the opinions of men. These will naturally be, at the present day as for Aristotle himself, of two main kinds, the opinions of the ordinary man, common sense, or, as he put it, of 'the many', on the one hand, and the opinions of the expert in the several departments of life and thought, or as he put it, of 'the wise', on the other. To the first head, common sense, we may credit, for example, an unquestioning acceptance of the reality of the external world, pervaded by an all-relating space and time, a lively conviction of the real efficacy of the human will as expressed in action, a belief in superhuman divine agencies, variable both in strength and in its expression from time to time and place to place, but seldom or never quite

negligible. Under the second head we have to reckon with the point of view, explicit or implicit, of the various specialists—the scientist, the historian, the artist, the politician, the theologian, and so on. The business of the philosopher will be to survey the whole of the material which these opinions offer, with the object of producing an acceptable theory of the whole, a scheme in which, so far as possible, all can find a place.

When we say ‘an acceptable theory’, we do not mean a theory which satisfies the philosopher’s personal preferences, but primarily only a coherent and comprehensive theory. The ideally best solution would be for us, as for Aristotle, that which includes and sets in due relation the whole of the material submitted. Such a solution would clearly be acceptable all round. If that is not feasible, as it is hardly likely to be, then as much of it as possible. For the specialist the value of a philosophical synthesis approximating to this result would be that from it he would gain increased confidence in the soundness of his own speciality and a new sense of its contribution to the wider social whole from which it springs. The philosopher in his survey of the material will no doubt come upon inconsistencies and contradictions, and these he must somehow smooth away. Often he will find that the opposition is more apparent than real, because those who have only their own case before them,

and are obsessed with its justice, tend to claim more than they need to claim. In such cases a mere restatement of one or both sides, in which the substance of the original contention is preserved, will suffice to remove the contradiction. But there is likely to be a residue, probably quite small, of cases in which the opposition is more obstinate and deep-seated, so that no restatement satisfactory to both parties is possible. Some common beliefs are false, and claims based upon them must be dismissed.

So viewed, the task of the philosopher is from beginning to end one of constructive criticism. He has no independent source of truth open to him which is not open to other people: he depends throughout on the previous labours of others. The organising principles of the field which he surveys are not of his independent devising, but principles which disclose themselves in the course of his survey, being forced upon him by the facts, that is, the opinions submitted, just as the original opinions were forced upon those who formed them by the facts with which they were in contact. But not all philosophers are content to give mind so passive a rôle as this. Kant's famous Copernican revolution, it will be remembered, asked us to view objects as conforming to the constitution of mind, not mind as conforming to the constitution of objects. Into the questions raised by that formula I cannot here

enter: I mention it only by way of warning. But, apart from that, in this critical work there is room for much difference of attitude between philosophers, according to the degree in which they are prepared to leave their systems incomplete. There is an element of agnosticism in all empiricism. The more a philosopher bases himself on experience, the less exacting he tends to be in his constructions, the less disposed to use the criterion of intelligibility, the more content, in the words of John Locke, 'to sit down in a quiet ignorance of those things which upon examination are found to be beyond the reach of our capacities.'

21

Retrospect and Prospect

What we have been doing hitherto in these lectures, though in somewhat informal and unsystematic fashion, is to bring forward for inspection and review certain opinions concerning the time-process and the ways in which it is to be analysed and understood, which have been influential in ancient and in modern times. Our preliminary discussions have disclosed a variety of conflicts and tensions between one opinion and another, between the Greek view and the Modern view, among the 'wise' of our own day and between

them and the 'many'. What we have now to do is to attempt a philosophic synthesis, which, having in view the whole field and all the interests concerned, will reconcile and harmonise, so far as possible, all these conflicting claims. A brief retrospect of the argument up to this point will provide the best point of departure for this last journey.

The Greek synthesis, from which we started, has great merits. It is in a sense more complete and comprehensive than any which the modern world has to offer. In its own day at any rate and for the contemporary Greek mind it may well have been more generally satisfactory than any modern philosophical system is for the men of to-day. But for the modern mind this synthesis has certain profoundly unsatisfactory features, which make its mere revival quite unthinkable. Interests which were lacking or negligible in ancient Greece are dominant in modern thought, and though their present dominance may be temporary and excessive, they have certainly come to stay. The doctrine of the four causes, as developed by Aristotle on the basis of what he learned from Plato, is discredited in the modern world, first, because of its excessive subordination of explanation in terms of material components to explanation in terms of form and essence, secondly, because in the long run, in consequence of this attitude, it is felt to deprive the time-process of all real significance. By the

quite arbitrary postulate of an inevitable cyclical return in the movement of things Aristotle secures that everything that is effected in time is somewhere undone, and thus deprives development outside the individual life of all meaning. When we make these criticisms, we are not just confronting one prejudice by another, each merely typical of its period. We are saying that Aristotle's synthesis does not sufficiently honour those elements in human experience which are represented by the scientific and historical judgments. Nor are we accusing Aristotle of culpable blindness. We recognise that the interests which find expression in these judgments were not sufficiently developed in his day to take their proper place in a critical survey of human experience as a whole.

The review of modern thought which followed was confined to an attempt to define and clarify these two interests, science and history, which have been the main factors determining the general surrender of the view of cause inherited from the Greeks, and to trace the effects which submission to them, to either or to both, has had on the general intellectual climate. The most obvious general tendency of modern thought, as compared with ancient, in this context is the tendency to accept the time-process as self-contained and self-explaining, to view it as requiring no eternal or other ground beyond itself for its explanation, to take time, in

short, as ultimately real. This tendency has in fact become more marked during the present century, and both science and history can be seen to have contributed positively to it. So far then these two factors are seen to cooperate. But when we come to examine them more closely, they are found to fall apart, and even at times to be in diametrical opposition to one another. This latent opposition comes out most clearly, as one would expect, when the attempt is made to generalise the principles of either method and make them the principles of a metaphysical synthesis. With such attempts we were concerned in the second half of the last chapter. We there took nineteenth century materialism, as mirrored in Mill, as the type of scientific metaphysics, and Bergson's philosophy of intuition as our example of a metaphysic based solely on history. Each of the views has been shown to involve deeply unsatisfactory and paradoxical features: each, it may be suspected, loses plausibility by its onesidedness, that is, in virtue of its exclusions. Each indeed may be said in a sense to confute the other, because each is felt to contain some truth which the other ignores and implicitly rejects. Yet it is not easy to find a simple way of reconciling these opposites. There is no opening here for compromise, and it is certainly not sufficient to deal with them, as half-truths are often successfully dealt with, by asserting them both simultaneously.

If a real reconciliation is to be effected, some further principle requires to be found on which reconciliation can base itself.

The final task of these lectures then is to suggest an outline of the possible terms of peace. To be acceptable by all parties, these terms of peace have to satisfy three vital conditions. In the first place they must make room for the full recognition of the material cause: that is, for the explanation of things in their physical composition, which is the chosen method of modern natural science. Secondly, they must provide for the full acceptance of positive significance in the historical process, with all that that implies. Thirdly, they must end the conflict between these two interests, science and history, by removing the misapprehensions which are its cause. This means that they must open a way towards convincing these two rivals and enemies that they are fundamentally allies, co-operating on different but complementary lines in a single task. I said at the outset that the contention of these lectures would be that the modern world was trying to work with too narrow a conception of cause, and I indicated in advance the general nature of the solution I intended to suggest, as a proposal for the reintroduction, with some modification, of the Aristotelian conception of a timeless formal cause. Thus the terms of peace which I now have to offer embody as their main

thesis the view that the three conditions laid down above can be satisfied, and can best be satisfied, if the view that the temporal process is self-explaining is surrendered, and both nature and human history are viewed once more *sub specie aeternitatis*.

22

The Materialism of Science

Before however actually facing the task of reconciliation, it will be as well to attempt to state once more, as briefly as possible, the essential character of each of these opposites, with a view to bringing out the inevitable limitations of each and to suggesting the kind of supplementation which each requires.

The essential limitation of the scientific point of view is, I believe, correctly described in the three words, science is materialistic. But the word materialistic is not free from ambiguity, and therefore some further explanation is necessary. A materialist is often, perhaps usually, understood to be a man who refuses mind all independent reality, who maintains that bodily states and changes account for everything that is real, including mind itself. The causal chain, in his view, is complete when the bodily series is fully stated; and when mind appears to move body, as in human volition,

what is actually happening is that body is moving body: the mental phenomena are otiose accompaniments of the bodily transaction, epiphenomena. A materialist, on this view, is one who stands for matter as against mind, for body as against soul. Now it may be true that some scientists are rightly said to be materialists in this sense, but it is not in this sense of the word that I wish to say that science is necessarily materialistic. The opposition which I mean to employ is not that of matter and mind, but another opposition which is sometimes confused with it, namely, that of matter and form. What I mean to assert is that a scientist is of necessity committed to the analytic method which succeeds so far as it exhibits a complex thing or state as determined by the things and states of which it is made up. Science, for example, can explain a statue satisfactorily so far as the explanation can be given in terms of the marble of which it is made. A marble statue is of course, apart from minor flaws, wholly marble: there is nothing else whatever in it; and therefore in a sense a complete account of it can be given in these terms. But it also has a form, which gives it significance as a work of art; and though each detail of the shaping by which this form came into existence under the sculptor's chisel can be precisely accounted for by the reactions of the marble to the movements of that chisel, though the final shape itself yields to scien-

tific analysis as a composition of such and such complexity and proportions, so that nowhere does the scientific account clearly fall short of completeness, yet common sense and artistic feeling obstinately retort that the scientist has the matter upside down: it was the form that determined the shape and guided the shaping.

I will give another illustration, which will, I hope make clear my meaning as to the ambiguity in the word materialism, and at the same time show that the point is of some importance. There is a doctrine, which during the last hundred years has been rather widely held, that the course of human history can be fully explained in purely economic terms. It was adopted by Karl Marx and is generally accepted by the Marxists of the present day. This doctrine is often called by the name of the materialist interpretation of history; but the correctness of this description is sometimes questioned, and the Marxists deny that they are materialists. In this case it is surely clear that the correctness of the description depends on which of the two senses of materialism is being used. Since the Marxists assert that mind has laws of its own, not derivable from those of the matter in which it finds expression, they cannot justly be accused of being partisans of matter in the opposition between matter and mind. Mind for them is clearly no mere epiphenomenon. But if the opposition in question

is that of matter to form, the economic interpretation of history is correctly called materialist. It is in fact essentially the attempt to extend to history a method which has been successful in the natural sciences, and it is adopted with enthusiasm by Marxists and others precisely on that account. For in human history what are the patent observable phenomena? The primary facts at each turning point in history are certain decisions which kings and statesmen, generals and leading citizens, take upon the evidence before them: willed actions, then, undertaken like all willed actions in the light of some good to be gained from them, or some evil to be avoided. The evidence includes the condition of the masses of their fellow men affected by their decision, the constitutions, laws and institutions under which these masses live, the general social organisation so far as it is created and maintained by political action. What those who accept the economic interpretation of history intend to assert is that this visible macroscopic process of consideration and decision by prominent persons does not contain the really operative forces. On the surface we see the decision of the statesmen, and we are tempted to take it as a true cause. But this decision can be seen on closer microscopic inspection to be a mere façade behind which another process is going on by which it is causally determined. This process is in all societies the same: it is the

pursuit by numberless unknown individuals of their own personal economic necessities, as they seem to each best securable under prevailing conditions. This is the fundamental fact, and all else—the form of contemporary institutions, the general character of laws and constitutions, even the detailed decisions of the actual holders of power—depends in the end on these economic activities and the relations between citizens arising from them. It is surely evident that this principle of historical interpretation is fundamentally a form of scientific materialism, in the sense that like the natural sciences it is directed to showing form as determined by matter. The numberless unknown individuals play the part assigned by Democritus to his atoms. A complex thing and its behaviour is explained by reference to its separately insignificant components. The principle represents, in short, that reliance on the material cause which is a universal characteristic of the scientific point of view.

Briefly stated, the materialistic principle is the principle that the higher structural levels are explicable in terms of the lower. Thus so far as the Marxist credits mind with laws of its own, he does not offer a materialistic explanation of mind itself; but he is not thereby in any way prevented from using the principle in his detailed treatment of mental phenomena: within the closed world of mind he can still treat the lower levels as explana-

tory of the higher. It was the example of contemporary science which led John Locke to devise the 'new way of ideas' which determines the structure of his *Essay*. He wished to lay bare the nature of thought by breaking it up into its elements, as others had illuminated the nature of body by analogous analysis. Similarly the modern psychologist, who traces the pedigree of Reason and Will from sensation, appetite, and instinct, and seeks the explanation of the phenomena of the conscious mind in unconscious states and processes, is clearly emulating natural science and adopting its methods. Both Locke and the modern psychologist may be said in these respects to be applying the materialistic principle. Whether they are rightly called materialists depends on whether they rely on this principle exclusively. When I say that science is necessarily materialistic, what I mean is that the scientist in his science necessarily relies on this principle alone.

One further word is necessary to bring this materialism of science into connection with time and the time-process. The structurally lower level is always, it seems, credited in some sense with temporal priority. The early Greek atomists thought of their atoms as moving at first free in empty space before by their collisions they gradually brought to birth the world we know. Sense clearly comes before thought and desire before will. The nineteenth century formulation of the theory

of evolution was the welcome confirmation of this age-old principle of the priority of the simple to the complex in a new field. 'Thus for materialism, the line of causal determination goes one way only, the way of "Time's Arrow".'

23

The Individualism of History

For the historian, as we know him, it is generally true that 'man is the measure'. History is primarily the exploration of the records of human societies, the analysis in temporal sequences of the development of man's behaviour to man and to nature; and any wider use of the term, in reference to geological processes antecedent to man's arrival on the world scene or to the evolutionary biologist's account of the sub-human ancestry of man, is naturally felt to draw its justification from this human centre, as an extension into the remoter past of our knowledge of certain fundamental sequences on which the life of man depends for its existence. Probably both the geologist and the biologist would immediately resent such an estimate of the significance of their contributions; but that only shows that they are scientists and not historians. For the historian in fact seems to read the time-process with an opposite emphasis to that of the scientist.

His emphasis is on what came into being and his aim is to show the steps by which it came to be. Thus each stretch of past time is read and interpreted in the light of its future, and for that reason the nearer events are to the present time the more difficult and defective a historical account of it is bound to be: there are so many elements in it the future of which is still uncertain. This opposition of emphasis between the two in the reading of the time-process is only another way of saying that, whereas the scientist is primarily interested in the simple components, the historian finds his centre of interest in the complex resultant. And this means for practical purposes that the historian's subject is man.

Bergson's philosophy, which was taken as representative of the historical point of view, is true to type in this, that for him certainly 'man is the measure'. Human consciousness is his basis and starting point. Consequently he is not and cannot be materialistic in any genuine sense, for the human consciousness testifies in all its manifestations to form as dominant of matter. The receptivity to the surrounding physical world, which, in the form of sensation and its correlative appetition, is the constant feature of conscious life and the precondition of all cognition and conation, is able to enrich consciousness only in virtue of an unremitting activity of response which transforms these

potencies into actualities. The detailed interpretation may well be doubtful, and even the foregoing statement may contain features which Mr. Bergson would not himself accept: but the main point is not, I suggest, doubtful, that to make consciousness primary is to make primary an activity, and by so doing to preclude a materialistic view of the world.

This opposition to materialism is implicit, I should argue, in all genuine historical thinking. Unless the 'man' who is taken as the 'measure' is conceived as an active force and principle, credited with real agency and formative power, history loses all sense and meaning. Clearly, to take an extreme hypothesis, the would-be historian who decided that all the significant sequences in the period falling under his review were purely physical in character, and thus totally infra-human, would see 'history' totally disappearing under his gaze, as colour and taste under the physicist's microscope are said to vanish into the realm of illusion. History for him would have become science, perhaps a special department of it, perhaps not even as independent as that. No such extreme attitude as this is likely to be found among professed historians, but many of them are inclined towards an economic determinism which is, as I have already argued, a form of materialism. For many reasons it is by no means clear that this doctrine or principle deprives history of meaning. Even if it could

be completely carried through—which it cannot, for innumerable historical phenomena elude economic explanation—it would still be the case that the actions which are deprived of independent significance are only those of the great, and these are viewed as finding their explanation in action still, but in the uncounted actions of small men. Thus all that has happened is that the individual human will has retreated into the background, and man in the mass has come into the central place as the historian's subject. To this mass, individuality and formative power will be credited and must be credited if history is to survive.

But we must remember also that while materialism involves the denial of the formal cause in the area which it covers (in the example of economic determinism what is denied is the formative power of the individual human will), the assertion of the formal principle does not conversely involve the denial of material causation. Form requires matter: without matter it may be said to be almost by definition non-existent. And where form is operative in matter, there will inevitably be phenomena which find their explanation in the matter operated upon. There is room here for much difference between thinkers who agree in their rejection of materialism, in their assertion of the reality of human choice and of the formal cause. They will differ in the degree of their reliance on explanation

of the material order. The more optimistic and idealistic will see an economic transformation. Every modern historian will recognise that economic explanation has its place; but they will differ on the question how important that place should be. Where the matter of circumstance can be viewed as providing opportunity for successful human action the historian's interpretation is in terms of human will and purpose, *i.e.* of creative form; but the opportunity itself was found, not made, and the form is not limitlessly effective. On both of these counts recourse must be had to the material for the proper interpretation of the facts.

It is surely obvious that in a complex being, such as man is, activity on the higher conscious levels is necessarily somewhat spasmodic and intermittent as compared with that of the lower levels which underlie and precondition them. If we confine our view to a man's fully conscious life, we shall find the most inexplicable gaps, jumps and discontinuities; and in face of them our natural and quite unreflective procedure is to bridge the gap by referring to the lower-level activities for an explanation. We explain a dream by something eaten late at night, a prejudice by external biographical circumstance, a change of view by a change of health or occupation. By recourse to the lower level of life we thus restore the threatened continuity. This is no doubt the common sense of scientific

materialism. The natural scientist is a specialist in this order of explanation: that is his peculiar function in our modern intellectual economy. It also explains the modern psychologist's tendency towards materialism, his reliance on instinct and his emphasis on subconscious mental processes. A similar motive was consciously present in the assertion by the philosopher Leibniz of the importance of the *petites perceptions* in the mental life. But, outside natural science, such materialist explanation, however frequently it may be employed, is always essentially subordinate and subsidiary, except when by some special theory, such as psychological behaviourism or economic determinism, a conscious effort is made to force thought into the mould of natural science. And this seems to me to be overwhelmingly true, above all of history. The *vera causa* for the historian is always in the end form, not matter—a powerful and outstanding personality, the pervasive character of an age or of a people, each regarded as drawing from the environment material or opportunity, rather than as resultants deducible by otherwise assured scientific principles from the ascertained nature of that environment. It is in the achievement of such syntheses that the historian finds final satisfaction. In this he is opposed to the scientist, whose aim is the exhaustive analysis of the material conditions. He is opposed to the scientist also in this, that the

form he seeks, though pervasive of time and space and possessing therefore a kind of universality, has its definite spatial and temporal situation on which its significance largely depends, while the concepts by means of which the scientist pursues his analysis of the material are universal, after the fashion of the Forms of Aristotle and Plato, standing in a relation which is purely accidental to their temporal manifestations. This individuality of the form which history seeks and exhibits, this necessary immersion in space and time, constitutes the fundamental point of difference between the historical point of view and the pre-historical rationalism of ancient Greek metaphysics. A restatement of the Greek point of view, therefore, if it is to have any success to-day, must do justice not merely to the materialism of the sciences, but also, to sum it up in a phrase, to the individualism of history.

24

A Comment on Bergson's Version

If the metaphysical prejudices of the historian have been correctly described in the last section, it must be admitted that the Bergsonian metaphysics is an imperfect expression of the historical attitude. For though Bergson is profoundly concerned to assert the uniqueness of every event and the ir-

reversibility of every process, and so far concedes to the historian a main part of what he wants—more of it, indeed, possibly than any leading philosopher has ever previously conceded—at the same time it is true that he has little to say of personality and individuality, and that he betrays his scientific and biological antecedents at every turn by thinking always in terms of race and species than of the passing embodiments of these in animal and human form. The imperfection, I say, must be admitted, and it remains a matter for judgment, where the emphasis should lie, whether on the points in which he endorses or on the points in which he departs from the historical point of view. In my view the former are more fundamental, and in any case the choice of Bergson as representative is justified until a better can be found, because an actual existing system is a more cogent instance than a fictitious system which no one has fathered, and his system, if I am right, goes further in concession to the historian than any other has ever done.

It is worth noting, further, that Bergson does seem in the last analysis to rest his construction on a single ultimate individuality. The arguments of his *Creative Evolution* do not really make sense unless they are read as an account of the complicated manœuvres by which a single principle, the principle of life, something presumably itself living or more than living, itself instinct and intelligence or

more than these, works itself out into ever fuller and more varied expressions. He is deeply concerned to assert the ultimate unity of the life-force in all its innumerable parallel and successive manifestations. The unity of a simple movement such as a man makes when he moves his arm is a favourite example with him of the real oneness of what we experience externally as temporal process. But clearly he cannot confine his assertion to so short a span of space and time as this. He must wish us to extend this re-reading of process over the whole field of world history, and to see a similar unity in the secular process by which the animal kingdom was formed and man brought to his present phase of life. But as the unity in the example is furnished by that phase of the human spirit which we know as volition, so the general interpretation of world process which is suggested by the example must be an interpretation in terms of a world spirit endowed with volition or some yet higher power of the same kind. The problem is only transferred from the individuals to the one ultimate individual: it is not escaped by being removed to the world-stage.

One might well ask, on what for Bergson does this assertion of ultimate unity rest? It rests partly no doubt on current evolutionary biology, on the widely accepted theory of modern science according to which all life is ultimately traceable to a single source. But this theory is not proved.

Among biologists themselves there are authorities of repute who seriously question it. Even if those doubts were removed, the gap would still remain a wide one between the kind of unity which the findings of science necessarily imply and the kind of unity which Bergson's interpretation of the world actually asserts. The metaphor of a river, already suggested when we speak of all life as derived from a single source, gives the scientist almost all the unity he wants, the continued persistence of a motion or impulse, which remains throughout fundamentally the same, but takes on ever new forms as it meets and overcomes in its long course one obstacle after another. This conception fits naturally into the space-time framework of the sciences, and promises merely to extend over the more complicated motions of living things principles already proved valuable in the explanation of the inanimate. But it is essential to Bergson's case to destroy this space-time framework and get rid of the concepts which belong to it, and therefore such unity cannot satisfy him. The example of what we recognise in our experience as a willed movement gives him the clue to another kind of unity. But if the question is asked how and on what terms the unity of an individual man's voluntary movement is to be conceived as transferred to the secular evolutionary process, as comprising so vast a range of phenomena so immensely scattered and dispersed, Berg-

son's writings will be found to give little or nothing by way of detailed answer. He postulates clearly enough the unity of his Life Force, but he does not discuss in detail the nature of its unity or its relation to the series of transient individuals through which its unity is maintained. Thus it seems that the monism of Bergson's metaphysics is not necessitated either by the scientific evolutionary theories which most influence him or by the detail of his own argument. The choice between a monistic and some sort of pluralistic or monadistic interpretation of reality depends on a personal preference or intuition, the empirical evidence leaving choice free. His own choice is for the one; but others are free to choose otherwise, and, having chosen otherwise, they would find themselves in as good a position to accept the main part of his argument as he is himself. They would also find themselves much better able to find room in their philosophy for the individualism of history.

25

Can Science and History be combined?

Suppose now we try to combine these two opposites, the scientific and the historical points of view, to assert them simultaneously, shall we be in any real difficulty? We shall of course be commit-

ted to endorsing both sides of those oppositions between the two points of view on which we have already dwelt. We shall have to recognise nature as at once uniform and infinitely various, as repeating herself endlessly and yet as never for two moments the same, as in the field of unchanging laws and universals and as a theatre in which an endless series of unique characters plays each its irreplaceable part. At first sight it may seem rather a desperate feat of logical acrobatics to attempt these combinations; yet it is not really so difficult. These are indeed opposed and even contradictory qualifications, and the proposed combination would not be complete until each had been carefully examined. But, as Plato pointed out long ago, it needs no very acute logician to perceive that a spinning top, which is rotating quickly on its point, 'sleeping' as we say, is correctly described by the two contradictory attributes, at rest and in motion. In one respect the top is at rest, in another it is in motion. So with these opposites credited to nature we should hope to show that different partial views of the whole gave legitimately these different and only apparently contradictory results. Such a conciliation therefore is by no means hopeless, however difficult in detail it might be. In a sense the very completeness of the opposition robs them of their sting. And just as a fixed alphabet and vocabulary do not prevent poets from continually enriching civilisa-

tion with novelties in poetry, so with nature, we may suppose, the element of sameness does not obstruct the continual appearance of difference.

In the case of language the mutual implication of the two factors, sameness and difference, is quite obvious. This alphabet and vocabulary first establish and reveal themselves by the different uses to which men put them. So, it may be suggested, also in nature, the ceaseless repetition which we have found to be characteristic of it, for the first time acquires sense and significance when it is seen as the vehicle of life. The notion of repetition clearly involves the notion of time: what is repeated has been done before. But the fact of repetition defies time, and, so far as it goes, deprives the passage of time of all meaning. That is the gist of Bergson's attack on science. Its substantial truth is conceded in much that the more philosophical scientists have written recently on these questions, for instance, in Sir Arthur Eddington's justly famous Gifford lectures. It is admitted in effect there that at the purely mechanical level, for the chemist and the physicist, time is meaningless. The most obvious property of time, the one-way traffic rule which sharply differentiates it from space, is called by Eddington 'Time's Arrow'. Of this he says that, while it is vividly recognised by consciousness and vigorously endorsed by our reflective reason, "it makes no appearance in physical science, except in

the study of organisation of a number of individuals.”¹ Thus we have the word of an eminent physicist for it that in pure physics time is an awkward intruder. The reason is, presumably, that time has become a fourth dimension of space, or is needed only for repetition, which is of all things, almost proverbially, the most meaningless. But when we turn to life the situation is quite different. At once mere repetition becomes inconceivable, and the time factor consequently becomes so all-important that time had been called the form of consciousness.

I pause here to note a passage in Samuel Alexander’s *Space, Time and Deity*,² which seems to me not to be fully explained in its context but may have some connection with the foregoing speculations. “Time”, he writes, “as a whole and in its parts bears to space as a whole and its corresponding parts a relation analogous to the relation of mind to its equivalent bodily or nervous basis; or to put the matter shortly that Time is the mind of Space and Space is the body of Time”. If the vivid and provocative phrase with which this sentence closes is read in the light of its preamble, what is asserted is only an analogy. The structural relation of Time and Space is said to be similar to that of mind and body. I conjecture that the main points which Mr. Alexander had in mind in asserting this analogy

¹*The Nature of the Physical World*, p. 69.

²*Space, Time and Deity*, II, p. 38.

were, on the one hand, the priority of space to time (for though they are intimately interlinked, he elsewhere argues, they are not co-ordinates: space can be conceived without time much more satisfyingly than time without space); and, on the other hand, the extreme disparity of these two all-relating principles: of the one, space, all parts are co-existent, of the other none, and so through all the list of definable characters, what is asserted of time has to be denied of space and *vice versa*. Both of these points have their obvious analogue in the relation of mind and body. Body similarly is prior to mind, and mindless body is more easily conceived than bodiless mind, or mind without bodily attachment; and the polar opposition of the two has been a familiar theme of reflection since the days of Plato, developing in the modern world into the conception of the union of soul and body in man as the temporary union of two wholly disparate substances, with different origins and destinies. This is the two-substance theory, as it is called, which has dominated modern thought, though by no means to the total exclusion of alternative views, since the seventeenth century.

Taken simply as an analogy, then, the observation is suggestive. But should it be left at that? An unexplained analogy is notoriously a problem demanding further exploration, and in itself of little value for speculation. An explanation of the

resemblance, if found, will probably bring the whole assertion on to firmer ground by exhibiting the four terms in functional or other necessary relation. What I wish tentatively here to suggest is that when we relate and oppose Space and Time, as Mr. Alexander does in the passage quoted above, we are really opposing and relating, under the disguise of these general terms, the inanimate and the animate: to put it briefly, I suggest that "Time is the mind of Space and Space is the body of Time", because without mind, or life, there is no time, as without body there is no space.

The main point which seems to emerge here for the proposed combination of the scientific and historical points of view is this, that if the two views are to be genuinely combined, and the scientific point of view is not to be covertly rejected, a certain priority must be granted to it. The alphabet and the vocabulary must be there first before they can be used.

26

Deficiencies of the resulting Combination

Let us now take a step further. Let us suppose that a genuine combination of these apparent opposites, the scientific and the historical points of view, has been effected, that all the threatening contradictions have been conciliated and all diffi-

culties smoothed away. Would not such a combination give us all we are entitled to demand from a philosophy, a view of the world reasonably adequate for all purposes? Is there any reason to suppose that something is still lacking, which the philosopher must attempt to make good if peace is to be brought to the restless mind of man? The inescapable answer to these questions, an answer which can be verified without difficulty on almost any page in the long history of human thought, is that the time-process still baffles us. The recognition of the historical point of view has given life and mind an independent position and significance. These are no longer derived and wholly dependent characteristics of material things. The priority accorded to the scientific point of view no more annuls the genuine originality of life than the priority accorded to the alphabet annuls the originality of the user of words. This development from the scientific position involves the consequence that time is no longer otiose, a somewhat awkward and unwelcome intruder. For so soon as life and consciousness are recognised as significant on their own account, time is seen to do some work. It is a fundamental constitutive factor in the personal life of human beings, and life generally is unintelligible apart from it. So far then the combination represents an advance to a point of view more adequate to the fulness of experience.

But if we take a more general view of the matter it will be seen at once that profound reasons for dissatisfaction still remain. What the world now offers us is the picture of a succession of events without beginning or end governed by immutable scientific laws, and as an interlude, short or long, in that endless succession, another finite succession of individual lives, subject equally to those same laws but yet possessed also of ways of their own which are wholly foreign to the main succession out of which they spring. History affords no basis for disputing the scientific conclusion that Life cannot be regarded as coeval with the physical universe, but must be conceived as beginning at a certain point in its evolution and as destined to end as certain secular processes fulfil themselves. Such a picture as this can hardly give complete satisfaction. We may try to link these individual lives into a single chain by conceptions such as those of race and species or by some theory of the unity of the life force; but we shall not find ourselves substantially better off. We have only pushed the problem one stage further back. The problem of the relation of this intrusive life to its inanimate matrix constitutes one perplexing puzzle, as we have seen, but more fundamental, more far-reaching, and less touched by our previous discussions, is the difficulty of resting satisfied with this infinite extension of time in its two directions, before and after. We

seek instinctively, I imagine, for some means of grasping the universe as a whole, and in that search we are mocked by these 'unreal infinites' (as Bosanquet called them) of number, space and time. They seem to have the power to bring all things into mutual relation, and so awaken the hope of a triumphant conspectus of reality, but the hope proves vain as the world picture based upon them reaches definition and is submitted for judgment.

The demand that the universe shall be made conceivable as a whole is in essence the demand that each of its main features shall be shown in significant relation to the rest, each being seen to play its part in a general plot or plan, for which it is indispensable. Of a work of human construction, such as a play or a novel, we naturally demand, as Aristotle long ago observed, that it shall have a beginning, a middle, and an end. If the demand were temporal, it would be easily satisfied; indeed, every play would satisfy it. But it is of course much more than that, as the parallel example of pictorial and other artistic compositions, which do not require to be performed, would soon show. It is fundamentally a demand for organic unity in the work of art, such that each detail shall be felt to contribute its appropriate quota to the effect of the whole, and the work as a whole shall be felt to be maimed or weakened if even the slightest feature of

it is altered or removed. That this ideal demand is never completely fulfilled is only a sign of the imperfection of all human things. It is the demand which we naturally make, and when time enters, as in the case of a book or a play, it requires, without any question, that the time-process presented by the author shall be wholly subordinated by him to a general plan or idea which is not itself essentially temporal.¹ The human mind, which makes these demands of writers of fiction, makes them not less of the scientist and the writer of history. It is not satisfied that events on the world stage shall be shown as running on endlessly, haphazard, a series of loose episodes: it will have its beginning, the creation of the world, its end, the day of judgment, so that what falls between may be significant. It will have also its Great Artificer, the omnipotent God, who is eternally the same.

It is arguable, I admit, that this hankering after a vision of the universe as a whole is illegitimate, or, if not illegitimate, at least inexpedient. This is an age of reduced demands and moderated expectations, characterised by an agnosticism, which is no longer militant and strenuous, like that of the

¹It may be suggested, in this connection, that one of the fundamental difficulties in the way of making the historical novel a fully satisfying aesthetic form arises from the inevitable difficulty (especially when the history in question is well known to the public) of effecting the proper subordination of the presented time-process.

Victorians, but at once lazy and restless. Even the philosophers of our day are disposed to decline metaphysical adventure and to confine themselves mainly to ground which the scientists already report as conquered. There is much, no doubt, that is healthy in this, viewed as a reaction against past excesses, complacencies and dishonesties, but in philosophy such restriction of aim can hardly be more than a passing phase. For philosophy, like religion, owes its existence mainly to the deep desire of mankind that the picture, of which experience gives each man broken fragments, shall in some fashion be brought to completion; and consequently the philosopher who refuses in principle even to attempt this is false to his commission and denies his name. This does not mean that the philosopher must be a dogmatist, that he must be ready with an answer to every question. There is ample room for criticism and for scepticism. It is worth remembering that it was Immanuel Kant, in the preface to the work in which he claimed to have refuted dogmatic philosophy once for all, who asserted most positively this principle that a philosophy is nothing if it is not complete. He chose for it as motto the Latin line: *nil actum reputans si quid superesset agendum*—‘thinking naught done if aught remained to do.’

27

The Theories of Mr. J. W. Dunne

At this point gratitude and honesty compel me, much against my will, to insert some parenthetical remarks about the theories of Mr. J. W. Dunne. Concerning this problem of time, Mr. Dunne has written two fascinating and provocative books, for which everyone interested in these subjects must be grateful. In the first of these, *An Experiment with Time*,¹ he started from certain carefully recorded observations of dream-experiences, which strongly suggested that in their dreams men are capable of making direct perceptual acquaintance with future events, with events which, as we should ordinarily say, have not yet happened. Assuming these observations to be correct and the suggestion based upon them to be well founded, the next question obviously was, what light this threw on the nature of time. In other words, he had to formulate a theory of time which would make direct acquaintance with the future possible. The theory which he adopted was one which had already been employed extensively by physicists for other purposes, the conception of time as a fourth dimension, related to the three dimensions of space as these are to one another. The

¹Published 1927, third edition, 1934.

time-dimension is that dimension which in normal states of consciousness is mainly hidden from us; but in sleep apparently the blinkers, which exclude it from view, are to some extent removed, so that the parts of time, which for ordinary perception are successive, become co-existent and co-perceptible like the parts of space.

Now if you investigate these two words, 'co-existent' and 'co-perceptible', you see at once that they must mean 'existent at one and the same *time*' and 'perceptible at one and the same *time*'. Thus you have not got rid of time altogether; you have merely pushed it a stage further back. The time you were considering has become the fourth dimension in a kind of space, but the perception of these four dimensions will have its time; and this time can become, similarly, a fifth dimension. Mr. Dunne continues his argument from this point in his second book, *The Serial Universe*,¹ arguing that this retreat to a further dimension, which gives the time of the observer, will always be necessary. The three dimensions, as we know, require a fourth; the four require a fifth, the five a sixth, and so on. The series, in brief, has no stopping place short of infinity. But Mr. Dunne is by no means content merely to expound the law of the series which he has discovered. He claims in this second book that by his argument determinism is 'non-

¹Published 1934.

suited¹ and that immortality or eternal life is proved.² The point is that each of the members of the series, after the third, is a time, which means that it is the time of an observer. There is thus an infinite series of observers, and these observers are not distinct persons, but each and all necessary implications of the one human consciousness. The time-experience of the ordinary human being is found on analysis to involve the whole series and to be finally constituted by the observer at infinity, who, being included in no more ultimate experience (as by definition he cannot be), must be credited with immortality.

I have outlined Mr. Dunne's general thesis to the best of my ability, and I ask his pardon if I have inadvertently done it less than justice. I will not attempt to go into his arguments more fully, because the fundamental arguments are all mathematical, and I am deeply conscious of my inexperience and inadequacy in dealing with mathematical infinities. This is the chief ground of the reluctance to enter on this topic at all which I avowed above. But there is a general remark to be made, which is I think unaffected by any faults there may be in my statement. It seems to me to be quite certain that if immortal life is to be demonstrated in any genuine sense, it will have to be done by giving a new and fuller significance to the two

¹*Serial Universe*, p. 71.

²*Serial Universe*, pp. 236-238.

main terms in question, namely, life and immortality. I do not therefore see how an argument like Mr. Dunne's, in which the nature of life is never examined and the idea of immortality is not discussed, could ever truly be said to prove immortal life. I do not deny that an argument of a purely logical or mathematical character might be highly relevant to such a proof, but it would have to be subsidiary to the main argument and its contribution would be indirect. Such an argument could for instance perform an important service by removing some confusion or misconception which has hitherto obstructed a true approach to the problem. Nor do I at all wish to deny that on further consideration the ingenious arguments of Mr. Dunne's books may be found to have performed some such service. What I do feel certain of is that he goes too far in claiming that he has proved immortality.

Though I am unable, for these and other reasons, to make any direct use of Mr. Dunne's arguments, I think it is relevant to note that there are two main features in the position that he reaches by his very different road which have a certain affinity with the suggestions of these lectures. One of his main arguments may be described, in somewhat vague and general terms, as demonstrating the necessity of a supra-temporal factor in perception. Arguments fitted by that general description are

pretty frequent in the writings of modern philosophers. I will say something about them and their importance in a short time. The interest of Mr. Dunne's work from this point of view is that, approaching the matter independently, from a new and original angle, he should have struck upon this as a central point. Here then he would seem to supply valuable confirmatory evidence. But even here the highly formal character of his arguments leaves me in doubt whether the confirmation is not more apparent than real. The point, after all, which has specially interested the modern philosopher is the perception of temporal succession, the question how a mind which is no more than a succession of conscious states can be aware of its own successiveness. This problem does not come into Mr. Dunne's view at all: the question for him is rather how what is from one point of view successive can be from another point of view co-existent, and the regress is introduced to make that possible. It is doubtful therefore whether what we have here is not rather an external coincidence than a genuine agreement.

On the other main point of approximation I think even less weight can be laid. Mr. Dunne's view of the world is, as the title of his second book suggests, a serialism: perception implies an endless regress of observers culminating in the observer at infinity. This conception in itself has no resem-

blance to any idea with which we shall be concerned in the sequel. But when he is working, as it were, within the series, speaking of the normal consciousness as confined to its own fourth (temporal) dimension but under influence always from what perhaps may be called metaphorically higher points of view, then he begins to approach once more to common ground. This approximation however is easily explained when it is realised that the explanation of nature in terms of form and matter necessarily involves a certain serialism or stratification: the formed matter of the lower natural level is the matter which receives form at the higher; and therefore almost any natural character that can be mentioned is an intermediate being, giving definition to what lies below it in the scale of nature and receiving definition from what lies above it. Here again then the coincidence is external and accidental.

28

The Empirical Evidence for Eternity

If any empirical basis is to be offered for the postulate of an eternal order, it must surely be found in some feature of the temporal order. There should be some discernible character of the time series which referred outside that series for its explanation. When we passed some time ago from

the view of the world constructed by the scientist to the point of view of the historian, we felt that we were advancing, ascending in the scale of being, achieving a perspective more adequate to the fullness of experience. We were able to justify this feeling to ourselves, because, on consideration, we were able to see that a metaphysics based wholly on the sciences is unable to find room for history, while a metaphysics based on history inevitably makes provision for science as well. With the arrival of history time has come into its own. What we now seek is an opening by which we may advance once more from the level of time to what lies above and beyond. Such a search may well seem a wild goose chase. For we have now no obvious resource such as that by which we called in the historical judgment to supplement the scientific and correct generalisations based upon it. All our experience is temporal through and through, and we cannot hope to throw off our own shadows.

In an earlier passage I explained at some length that the main task of the philosopher, in my view, is to bring together in an effective synthesis all the various types of human experience. It may therefore be suggested that the natural and proper road for me to follow at this stage would be to introduce the data of religious experience and so call in the religious judgment to supplement and correct the historical judgment, as that was used in supple-

ment and correction of the scientific. The great religions of the world, it will be pointed out, have been fairly constant through the centuries in the assertion, for example, of a divine providence shaping events in accordance with a divine purpose, and the theologians of these religions, reflecting on such assertions as this, have been led to frame the theory of an eternal order on which the temporal order is dependent. What then is the objection to calling in this great body of evidence at this stage?

The suggestion in itself is reasonable enough. There is no doubt that a full discussion of the questions raised in these lectures would require a careful and critical examination of the data of religious experience. But that is in itself an enormous task, which it is no part of the plan of these lectures to undertake. The idea of these lectures was rather to present evidence derived from other sources than the field of religion in confirmation of a position widely maintained by the theorists of religious experience. The religious evidence falls therefore in a sense outside our present argument. Apart from that, there are special difficulties in regard to this matter of time and eternity in the way of a correct appraisal of the religious evidence. Though the concept of a divine control of the world is a feature of most developed religions, its precise formulation has been a matter of perennial contro-

versy, and anything like general agreement would be hard to obtain for more than the merest generality. The word 'eternal' itself has been very variously interpreted, and in the popular mind is probably understood to stand for the indefinite continuation of temporal existence. And then lastly philosophy itself has played an important part in shaping these ideas, working down through the theologians on the religious community, so that there is always room for suspicion that what we are being offered in the name of religion is only a concept of the ruling philosophy after all, thinly disguised with a religious colouring. Even therefore if the introduction of the religious evidence were not precluded by the plan of these lectures, it is doubtful if much help could come from it for our immediate purpose.

Thinking, however, of religious belief not as it is formulated through the reflective mind of the theologian, but rather as it is familiarly manifested in the daily life of the believer, there is perhaps one observation concerning its relation to time and temporal processes which I may not improperly make. Few things are more generally recognised as characteristic of a genuinely religious life than a certain indifference to worldly cares and ambitions. The characteristic is not of course peculiar to Christians: it is older and more widespread than the Christian faith. In ancient Greece Plato and Aris-

totle preached such detachment from the world as the goal of their ethical education, as the final freedom to be won by philosophy. It was the ideal which they named 'leisure' (σχολή). They wrote without express reference to religion, but the schools over which they presided were formally organised on a religious basis, and it is highly probable that this conception of leisure had a religious origin. Whatever its origin, the term served their purposes particularly well because it enabled them to formulate something which they rightly felt to be a fundamental demand both of the practical and of the theoretic life. A man can no more find his way through the complicated problems of personal and social life if he has no eyes but for them, than he can find his way across the sea if he keeps his eyes on the ship and on the waves. In navigation the stars provide the fixed point of reference which he needs, and for practical affairs similarly an external reference is the indispensable condition of security. These practical matters turn always on questions of pleasant and unpleasant, expedient and inexpedient, and generally of good and bad, so that the possibility of constant external reference depends on the confident recognition of an absolute good, in comparison with which all the relative goods of life cannot but seem trivial.

The point I wish to make is this. The control of desire, which is the fundamental condition of ethi-

cal achievement, is recognised as possible in the end only because man has in him a higher principle, relating him perhaps to a higher order than the temporal order to which his desires tie him. This is the principle behind the Greek theory, and equally behind the religious practice. On purely ethical grounds it could be formulated and defended, but it has been the special service of religion to the practical life of man that it has consistently exerted itself to keep this principle alive, giving it at the same time new warmth and colour from the rich resources of religious enthusiasm.

29

The Same continued

If there is good reason for thinking, as these last observations seem to suggest, that the solution of the practical problem, the achievement of a good life, depends on the avoidance of complete immersion in the flow of events, then it would seem that transcendence of time is in some sense a fact within the experience of man, and Bergson appears to be right when he urges us to explore the recesses of our own consciousness. Here or nowhere an empirical basis for further advance will be found.

What Bergson asks us to do, it will be remembered, is to sink ('install') ourselves in becoming.

He asks us to withdraw ourselves into our own being, and then, he says, we shall at once verify the fact that passage and process are the very stuff of life. But if we thus reflect on the successiveness of our conscious life, there are other things than this that we may note. There are things that other philosophers have observed and recorded before him, things possibly even more significant than this process-character on which he is so insistent. It was David Hume who first, in the middle of the eighteenth century, tried the experiment of representing mind as a succession of perceptions; and he has left on record his dissatisfaction with the result. Since his day philosophers have been much occupied with the problem which he left on their hands, and something like agreement may be said to have been reached that such an interpretation of consciousness leads only to a blind end. A self which is to be aware of passage and succession must be credited with some superiority to the processes of which it is aware. That a self which is merely a succession of conscious states is not a self in the sense required and is not capable of apprehending succession, this is a clear and widely agreed point. But when we pass to the attempt to formulate an alternative view of the self, agreement is much less easily secured. I will not myself attempt to formulate such a view. I merely submit at this stage as evidence the judgment of

an eminent philosopher of the last generation. The quotation which follows comes from Bernard Bosanquet's well-known Gifford Lectures,¹ delivered in the year 1911.

"Time itself (he writes), as we all know to-day, is a hybrid experience. Succession does not suffice to constitute it; and in the same way and for the same reason succession does not suffice to constitute a self. All this is familiar ground; and the only point of difference arises in the interpretation . . . which assumes different shapes according to the ultimate metaphysical theory." He goes on to give some examples of this difference of interpretation, and finally, turning to Bergson, adds with special reference to him—" *Durée*, the operative concentration of the self's past history at the growing point of the present, is one with the relative timelessness of a finite self. If then it is admitted that timelessness is an essential constituent of time—and this much will hardly be denied to-day—then to say of any finite being that it is temporal (has or is *durée*) includes, strictly speaking, all that can be demanded for the description of such a self by the theory which takes eternity to be its full and perfect character." A little further on he describes this same theory as involving the claim that "the distinctive being of the self is inversely as its dependence on externality and successiveness".

¹*Individuality and Value*, pp. 338, 339.

In this striking passage Bernard Bosanquet makes the bold claim that timelessness or eternity is now generally recognised to be constitutive of the self, and claims that even Bergson's *durée* implicitly honours this principle. The claim may have been overbold, even when Bosanquet wrote these words, and I am inclined to suspect that it was; but the surrender to time on the part of philosophers has gone much further since then, and Bosanquet himself, if he were still with us, would probably have to modify it now. Still the fact that a philosopher of Bosanquet's learning and authority could make the claim at all is sufficient proof of the existence of a widespread tendency to accept the conclusion that the self cannot be characterised satisfactorily in purely temporal terms. With the detail of Bosanquet's statement I am in no way concerned: towards the end of it, in pursuance of his own argument, he goes a good deal further than I shall be able to go in this discussion. I am not asking you to accept any of this on his authority as a basis for further advance. The only point I need for my further argument is that I may be allowed to use this admission—which he alleges, perhaps wrongly, to be general—the admission of the 'relative timelessness' of a conscious self, as a basis for discussion. It may of course be a faulty admission, and, if so, the rest of this discussion will stand on a rotten foundation. It is certainly not proved,

nor clearly defined. Proof is probably not obtainable, but definition should to some extent be provided in what follows.

I am asking you then to accept it as true, at least for the sake of the argument, that the perception of temporal succession itself proves that the perceiver is in some respect other than temporally successive, which is to say that the perceiver has in some respect non-temporal or timeless being. I propose now to go on to consider some of the immediate implications of this statement, with a view especially to throwing light on the nature of the timelessness asserted and on its relation to the temporal. In giving our own interpretation to this principle we shall hope to throw light on the causal structure of man and nature. The discussion will thus bring us back to the problem of cause from which we started. At the same time we may hope to come within reach of understanding the confidence of Spinoza's claim that man has direct perceptual assurance of his eternity. *Sentimus nos aeternos esse*. But perhaps in these words Spinoza meant to assert no more than the principle which I have submitted for your provisional acceptance. Perhaps he meant only that the act of perception is the empirical guarantee of the perceiver's supra-temporal being.

30

Form and Matter

At this point I wish to reintroduce the Greek notions of Form and Matter. Following Aristotle, I assert that all existing finite things are examples of formed matter, including man himself. For him this distinction was relative, not absolute ; for that in a thing, say a piece of marble, which constituted its distinctive excellence, and belonged therefore so regarded to form, also made it serviceable to the sculptor so that it was fitted to become the material of his statue. Thus the distinction in his hands provided an excellent basis for the analysis of the serial order or ladder of nature in which on an ultimate material foundation form is successively superimposed on form till nature reaches her climax in man. At each stage in this long ascent the opposition of matter and form is the opposition of instrumental to intrinsic means, or *conditio sine qua non*. The form possesses the intrinsic excellence which the lower grade of being lacks, and in making it serviceable for the realisation of this excellence raises it to the higher power of which it is capable. For us also let the distinction be in this sense relative, and let nature similarly be conceived as stratified, though the details of the ladder of nature may have to be varied a good

deal from the terms of the original draft, and the conception of man as a final culmination may have to be surrendered. But such modifications will hardly, I think, touch the essence of the doctrine, so far as it is relevant to our present discussion.

In reintroducing form and matter, I want also to reintroduce the formal cause and the material cause. These are both to be conceived as causal principles. But if justice is to be done to the natural sciences, the relation of the two principles requires reconsideration. Aristotle dreamt of a science concentrated on the formal cause, and looking to matter only for the explanation of defect and failure. Matter was essentially passive and receptive, and apart from its general function as matrix its only contribution to the result was an occasional and unaccountable resistance to the power of form. Only so far was the material needed in the explanation of nature. The other three causes, efficient, formal, and final, all represented activity of some kind, and all therefore, as we saw earlier, were conceived as modes of action of form. But the modern development of a powerful body of natural sciences concentrated on the explanation of physical things and events in terms of their constituents and antecedents, forces us to revise this. The only schematic alteration that seems to be necessary is to deprive the efficient cause of its close attachment to

form and attach it instead to matter. Then the four causes will be divided, not as in Aristotle, three against one, but two and two, constituents and antecedents on the one hand, form and purpose on the other. This may seem to involve the denial of the passivity which Aristotle attributed to matter. But this is not really so. It is still necessary to credit matter with such passivity as is required by its receptive function in relation to form. It has of itself in this relation no power of initiative. But this passivity is relative, like matter itself. Other activities of lower grade it must already have in virtue of the form or forms of lower grade realised in it. Thus, in general, matter must be conceived as the conservative force, expressed in persistence and repetition; form is the innovating force on which growth and development depends. Matter stands for the dead hand of the past, form for the magnet of the future.

Let us now attempt to apply these principles to mind or consciousness, and to the relation in which these stand to the body to which they are attached. We shall naturally conceive mind, as Aristotle asks us to conceive it, as the form of an animal body—an activity supervening upon lower animal activities which are its appointed vehicle, as these in their turn can be shown to rest on yet lower activities until the primal matter of all things is reached.

The life of the mind is made possible by all this substructure: it is limited by it, but it is neither created nor controlled by it. The lower activities have a kind of independence in relation to the higher, for they can exist and continue without them. Nature presents examples of animals apparently lacking mind, and in them those vital activities which in man serve to support mind appear to be quite as reliable as they are in human beings. We see also in man how these lower activities continue successfully while consciousness is interrupted by sleep and owing to the action of drugs or physical injury. The higher activities, those of the conscious mind, are dependent of course for their existence and continuance upon the lower, and in this sense have no independence at all. Yet they have an independence of their own, arising from the fact that to form matter is essentially instrument and opportunity. This means that matter is always replaceable: what form requires is never this particular piece of material, but always merely something of this kind. If this piece is withdrawn, another piece can be found which will do as well. It is an old story, which was quite familiar to the Greeks and is still in credit to-day, that the actual bodily substance of any living thing is continuously in course of renewal: materially, we are not, it seems, from hour to hour precisely the same, though the general pattern is in

principle preserved. In this way, then, form vindicates in its turn its independence of the matter on which from another point of view it is wholly dependent.

Does such a conception of mind enable us to characterise in any general fashion the higher conscious activities themselves? Let me take what may seem possibly a rather fantastic example. Suppose a marble statue were endowed with consciousness, of what would it be conscious? What I suggest is that it would presumably know itself as a marble figure and could explore its being on that side without definite limit. On the other hand it would surely lack any patent clue to that aesthetic significance which it possessed for its maker and which in fact we know to have been its actual *raison d'être*. But there is also this further point. Such a statue would only be endowed with consciousness, if consciousness in the statue were a necessary condition of the aesthetic form imposed by the artist, and because of that. The statue then, enjoying this consciousness, would have just so much of a clue to this higher activity into which it entered that it would be aware of possessing an attribute, namely, consciousness, which was unnecessary to the lower order of being, and unintelligible in terms of it. My illustration makes, first, the obvious point that since form is limited by the matter in which it is realised, a consciousness which

is a form will be a consciousness of whatever the matter provided makes possible—of that matter primarily rather than of itself, and of itself as the organising principle of that, or that kind of matter. It raises, secondly, a query as to the relation of a consciousness so conceived to any higher order of being for which it may itself provide instrumental material. Must not such upward continuation of the ladder of nature, if there be any, necessarily elude it? The answer suggested is that some sign of the existence of a higher order of being and of its nature might well be present to it in virtue of the perception on the lower level of factors not wholly explicable in terms of it.

31

Temporal and Eternal

We have now to consider what light this conception of mind as the form of the animal body throws on that timelessness of mind which is said to be empirically guaranteed in every act of perception. As the form of a living body, mind will be immanent in processes and activities which are through and through temporal. In these mind is realised, and without these mind, as we know it, cannot be realised. On the other hand, mind has also its independence, since it actively operates

upon these processes and activities which sustain it. For form is not to be conceived as a mere resultant pattern into which matter spontaneously falls, but as an—or rather as the only—originative causal agency. The conscious mind, then, which reflects upon itself, will be aware of itself as the organising and controlling principle of certain temporal series, and its detailed knowledge will naturally concern the various series controlled with a view to their better and fuller control. The situation itself seems to require that this form, which is consciousness, shall be turned towards and concentrated on the matter in which it is embodied, so that its ruling perspective and fundamental knowledge will be of that matter, that is to say, of the levels of being inferior to its own on which its own realisation depends. It will be aware of itself secondarily, and as it were indirectly, as that which succeeds in expressing itself through these.

But form, once more, has nothing in common with matter: it refuses every determination which matter accepts. The conscious mind, then, by its knowledge of itself, and by the disclosure contained in this of its active operation on temporal processes, is guaranteed as more than temporal, as a member of a higher order from which it draws its power and its freedom. This order must be described as timeless or eternal: but such a characterisation is essentially negative. It indicates no more

than the refusal of the form to accept a description which would make it homogeneous with the matter in which it is realised. But we are not left with bare negations. The reason for asserting this timeless being is the positive evidence which we possess that there is here something which exerts power and authority over the temporal. The eternal then, though its name may signify only the denial of time, is to this extent positively revealed. It is guaranteed as standing in a causal or functional relation to the temporal. It is formally definable in general terms as that higher level of being for the realisation of which time and the time-process provide the means and the necessary vehicle, as that by which they are justified, that in which they are perfected.

Though I am fully conscious how incomplete the sketch which I have just given is, even taken as a bare outline, I have to confess that I am not able to complete it, or indeed to carry it any further at present. I must leave it as it stands. But I should like to make some further remarks on the point of view which I have outlined with regard to its implications for the problem of freedom, a problem closely bound up with the conceptions of time and cause. My position obviously directly asserts human freedom as a cardinal fact. If what we call the human soul is the form of the body to which it is joined, and form is a true and genuine cause and

originative principle, then the human will is evidently a true and genuine cause and originative principle. But, if misunderstanding is to be avoided, two further points require to be made. In the first place, what is asserted, on the principles already laid down, is a highly relative freedom. Form was already in Aristotle relative to matter, and therefore limited by it, and this relativity of matter to form receives further emphasis when efficient causation is removed from the sphere of form, as we have seen reason to remove it, and placed in the sphere of matter. Sad experience assures us that there is in fact little enough origination in the world in proportion to what there is of repetition and imitation. But there is certainly some, and this small percentage of constructive innovation is the salt which saves the world from stagnation. In most of the actions, however, of most of humanity, mind is at the mercy of its material conditions, and might well be, for any sign it shows to the contrary, the epiphenomenal resultant that the materialists would have it to be. So that the very moderate degree of freedom asserted on the basis of this theory would seem to accord generally with the very moderate degree of it which experience of human nature would lead us to conjecture as a fact.

It must be observed, secondly, that the character of this freedom is far from fully clear. The

timelessness of the self is, as I have said, a negation, the denial to the form of a character constitutive of its material. The freedom credited to it is based on a parallel negation, asserting its refusal to be ruled by the laws which regulate that material. But of the organisation of this higher order itself, nothing has so far been said. For all we know, pure determinism may rule there, and in that kingdom the individual soul, which appears to us an independent personality, may have no genuine freedom. Thus the only kind of determinism which is explicitly excluded by the theory is that which is characteristic of materialism. Such determinism cannot be conceded without cancelling the causal efficacy of form altogether, but determinism of a more metaphysical kind still remains an open possibility. These considerations point no doubt to a serious gap in the theory we have outlined, but it is a gap that we cannot at this stage attempt to fill. In leaving this gap open, however, we may perhaps plead that we are true once more to experience. For what daily experience assures us is that man has really power to mould himself and his environment, if he will use it, not that he is responsible to no higher power in his use of it.

32

Conclusion

I have now to bring this discussion to some sort of conclusion. We have been throughout concerned with time and cause, two conceptions of perennial and fundamental interest to philosophy and deeply involved with one another. Our effort has been directed towards a revision of these conceptions and of their interrelation, guided by the suspicion that the modern world has on the one hand allowed itself to be too much dominated by temporal categories and has on the other hand so narrowed the conception of cause as almost to deprive it of significance. We have traced these modern tendencies to certain developments outside the field of philosophy, in particular to the rapid growth of historical studies and the spectacular successes of the natural sciences. These two powerful modern movements we found on analysis to be no natural allies, to be indeed in many respects natural rivals and opponents, and some of the incoherencies of modern thought may well be due to failure to harmonise these two influences. They were seen to be markedly divergent in their attitude to change and the time-process and in the causal conceptions which they employ. Their variance on these fundamentals was found to be so

complete that we concluded that they must represent two partial views of the world-process, which were really mutually complementary and could be shown as such by a revised causal theory. We therefore set ourselves in this last chapter to sketch a synthesis which would reconcile them after this fashion; and this sketch we have now submitted. It remains to consider briefly its adequacy for this task.

At the beginning of this chapter we laid down three conditions which the 'terms of peace' we were seeking must satisfy. They must satisfy the proper demands of the natural sciences by giving full recognition to the material cause; they must satisfy the historical spirit by conceding positive significance to historical process; they must cut the ground from under the misapprehensions which obstruct the alliance of the two disciplines. Assessing the results from the position now reached, I would urge that on all three counts much has been gained. The introduction of a timeless formal cause does not in any way invalidate the exploration of the material cause, in which science consists, or even involve a denial of the completeness of the account which science from its point of view gives. Any example of formed matter is completely expressible in terms of the matter of which it is composed. An account given of it in these terms will be exhaustive. It will find

no unexplained residuum, no unexpected irregularities due to capricious interference from the side of form. The incompleteness of the account given by science will however become evident, as soon as a non-scientific attitude (say, ethical or aesthetic or philosophical) is adopted, because it will at once be clear that the thing is not after all understood, that there is much about it that remains unexplained. And looking back on the scientific account itself from this vantage point one finds that a certain inadequacy is there confessed when the sciences avow their inability to foretell completely the character of the higher structural level from their knowledge of the lower, and introduce the term 'emergence', which is little more than a confession of this ignorance. What incompleteness is asserted, then, is partly admitted by science itself, and for the rest in no way damaging to science. The scientist is not asked to alter his methods or revise his conceptions. He is only asked, if he wishes to philosophise, to remember that he operates with a one-sided notion of cause from a special and restricted point of view, from which not everything is visible.

With regard to the second condition laid down, the attribution of positive significance to the historical process, everything depends on the character of the formal cause which is to be conceived as operative. This difficult problem has not been

discussed as fully as it deserves, chiefly because it raises metaphysical issues which are beyond the scope of these lectures. Aristotle's view of the world of nature as a theatre in which a closed repertory of forms endlessly repeat themselves leads naturally, as we saw, to a cyclical conception of time, which is the denial of progress and of real history. His forms were essences, universals, incapable of determining their own quantitative extension, but capable of entering into the material flux at any appropriate place and time. Here speaks the pre-evolutionary biologist: the dominant empirical observations behind this theory are clearly those of the animal kingdom. We have not attempted a theory of nature, but the conception of the formal cause which we have outlined starts rather from the human personality, and has therefore from the beginning the mark of individuality upon it. It has a certain universality in its transcendence of time, its relative independence of the matter in which it is realised: it is certainly no mere particular; but its universality is not that of an essence, and its relation to kind or species has been left wholly undefined. It is too late now to supply the missing theory of nature or explore this relation, but I would emphasise the significance of this recognition of individuality. It may seem to have come in in the course of our discussion on a side wind, but it is of fundamental importance.

For no philosophical system which fails to find a place for the individual can meet satisfactorily the demands of the historian and satisfy the second condition laid down above. The philosophical tradition has been consistently reluctant to give individuality its rights, and even to-day it is hard to find a reputable philosophic system in which it finds a central place. But history, it must be remembered, is still young, and it is the external influence of the historian which will eventually break this prejudice, as the external influence of the scientist eventually overcame the scholastic tradition in logic and the metaphysical prejudices connected with it.

Most modern attempts to assert a timeless or eternal order, on which the temporal order is dependent, have failed to give adequate recognition to individuality and to its unique importance as the principle which perpetually brings novelties into the temporal process. Therefore, already lacking any support from science, they have antagonised also the second most powerful of the modern interests, the historical. No wonder that they have been stillborn, and have failed to impress the mind of the modern world as a synthesis adequate to its experience. What is gained, what indeed is really meant, by attributing timeless or eternal being to that which is apprehended in logical or mathematical knowledge, or by vindicating a place

in some eternal system for the characters exhibited by the things which men most deeply value as true, or good, or beautiful? To me at least such timeless being makes no appeal. The philosophy which expounds it is to me only an imitation of Platonism on its weaker side, and not even whole-hearted in its imitation; for these philosophies commonly assert at the same time the full reality of the temporal process, which Plato refused to concede. There is much force and good sense, no doubt, in the claim, of which Bosanquet made so much, that these experiences of truth, goodness, and beauty represent the regions in which spirit is most at home, and consequently that it is in them that what he calls the timelessness of the self comes most clearly to expression; but these modern constructions miss the truth which he never forgot that spirit itself must be shown to be eternal before the eternity of 'values' can be shown to have any real meaning. And, we may add, when spirit has been shown to be eternal, the eternity of spiritual values ceases to need further proof.

The only kind of eternity which has any real significance either for religion or for anything else and is worth fighting either for or against by logical or other weapons is an eternal which is in causal relation with the temporal. It is such an eternal that I have tried to expound and defend. I claim with some confidence that on the basis of the Aristotel-

ian opposition of form and matter and the Aristotelian doctrine of cause, treated with some freedom and modified in particular by considerable concessions to materialism on the one hand and individuality on the other, it is possible to construct a view of the world which, without reducing the time process to insignificance, will yet place it in due subordination, which will do justice at once to science and to history, and which will provide by means of a realistic metaphysics for the spiritual governance of the world.

Index

This Index is incomplete and is intended only as a Supplement to the Table of Contents on pp. viii and ix.

A

- Agnosticism: in Empiricism, 97; *see* Ward
- Alexander, S.: relation of space and time, 121
- Aristotle: causes, the four, and their connection, 16; cause of motion, 17; contrasted with Hobbes, 33; cycles, 18; his defects, 98; time, 19; and change, his attitude to, 23 ff.; his method of consulting opinions, 93; his value for the problem of this book, 159
- Augustine and time, 3

B

- Bergson, H.: actions and things, 87; on cinematographic method, 83; *élan vital*, its relation to purpose and final cause, 88 f.; general character of his philosophy, 109; historical attitude, 81, 115; method of intuition, 84; principle of unity, 115
- Biology: influence on metaphysics of science, 79

- Bosanquet, B.: eternity and *durée*, 141; unreal infinities, 126
- Burke: 49; French Revolution, value of his attitude to, 50
- Bury, J. B.: on chance, 65; development and genetic history, 57; history as science, discussed, 60 ff.; historians, bias of, 65; progress, his definition of, discussed, 60 ff.

C

- Cause: efficient, as belonging to matter, 146; formal, *see* Form. *See under* Aristotle, Bergson, Eddington, Mach, Mill, Planck, Socrates
- Change: and time in Greek philosophy, 7 ff.
- Condorcet: and French Revolution, 49; on progress, 48 f.
- Constructive criticism: philosophy as, 96
- Cycles: Aristotle, 18, 20; M. Aurelius, 21 n; Nietzsche, 21 n

D

- Darwinism: attitude of, to history and science, 59
 Descartes: and Final Cause, 34
 Dunne, J. W.: theory of time, 129; proof of immortality, 132

E

- Economic: interpretation of history, 105
 Eddington, Sir A. S.: cause and effect, 43; causation and causality, 43; his idealism, 78; 'Time's Arrow', 37, 43, 108, 120; on uniformity of Nature, 73
Elan vital: see Bergson
 Eternal; and temporal, their contrast, 1 ff.; their causal relation, 159

F

- Form: as causal principle, 145; as origivative, 150; its individuality, 157; not an essence, 157; and matter, 103, 144 ff.
 Freedom: and form, 153; relative to matter, 152; and determinism, 153
 Freewill: and scientific theory, 75
 French Revolution: opposed to historical attitude, 49

G

- Gibbon: 46
 Godwin, W.: 50

- Greek philosophy: and change, 6 ff.; its merits and defects, 98

H

- Heracleitus: 6, 22
 History and Science: Ch. II, *passim*; complementary, 67; contrasting interests, 68; conditions of their reconciliation, 101; how fulfilled, 145; decisive features of modern period, 46 ff.; and individuality, 113
 Hobbes: and Aristotle, 33; Forms and Essences, 34; matter and motion, 34
 Hume: 46, 49

J

- James, W.: tough- and tender-minded philosophers, 93

L

- Leibniz: and *petites perceptions*, 113
 Leisure (σχολή): 138; principle behind it, 139
 Lewis, Wyndham: *Time and Western Man*, 4
 Locke: 26, 39; and materialistic principle, 107

M

- Mach, E.: cause and effect, 42
 Marx, Karl: economic interpretation of history, 104; his view of mind, *ib.*
 Materialism: mechanistic, 70

Materialistic principle: defined, 107; in what sense science materialistic, 102

Matter: and Form, 103, 144 ff.

Metaphysics: of Science and of History, Ch. II

Mill, J. S.: on causation, 38; on conservation of force, 41; his *Logic*, and scientific point of view, 32; on mind and will, 39; physics and geography in knowledge, 39

Mind: as formal cause of body, 146

Montesquieu: 46

Mure, G. R.: his *Aristotle* quoted, 16, 20

N

Nietzsche: theory of cycles, 21 *n*

P

Philosophy: as constructive criticism, 96

Planck, Max: on causation, 44; on idea of wholeness, 45

Plato: Platonic development in Greek philosophy, 8 ff.; on evolution of society, 26 *n*

Progress: basic idea of, 55; first hasty form of historical attitude, 57. *See under* Bury

Providence: and timeless God, 2

R

Religion: and unworldliness, 137

S

Scepticism of the instrument: 76

Science: two senses of, 67; and history, *see* History and Science

Socrates: on Cause, 11

Spencer: formula of Evolution, 56

Spiritual: interpretation of reality, 71 ff.

T

Temporal: *see* Eternal

Time's Arrow: (*see* Eddington) 37, 43, 108, 120

Time: transcended in perception, 139

V

Vico: 46

W

Ward, James: 42; his *Naturalism and Agnosticism*, 70

PRINTED IN GREAT BRITAIN
BY ROBERT MACLEHOSE AND CO. LTD.
THE UNIVERSITY PRESS, GLASGOW

